63D CONGRESS, 2d Session. | HOUSE OF REPRESENTATIVES. | DOCUMENT No. 659.

MICHIGAN CITY HARBOR, IND.

LETTER

FROM

THE SECRETARY OF WAR,

TRANSMITTING,

WITH A LETTER FROM THE CHIEF OF ENGINEERS, REPORTS ON PRELIMINARY EXAMINATION AND SURVEY OF MICHIGAN CITY HARBOR, IND.

JANUARY 27, 1914.—Referred to the Committee on Rivers and Harbors and ordered to be printed, with illustrations.

WAR DEPARTMENT,
Washington, January 26, 1914.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

SIR: I have the honor to transmit herewith a letter from the Acting Chief of Engineers, United States Army, dated 23d instant, together with copies of reports from Lieut. Col. George A. Zinn, Corps of Engineers, dated January 18 and August 9, 1913, with maps, on preliminary examination and survey, respectively, of Michigan City Harbor, Ind., made by him in compliance with the provisions of the river and harbor act approved July 25, 1912; also copy of supplemental report on survey by Maj. H. B. Ferguson, Corps of Engineers, dated December 8, 1913.

Very respectfully,

LINDLEY M. GARRISON,
Secretary of War.

WAR DEPARTMENT,
OFFICE OF THE CHIEF OF ENGINEERS,
Washington, January 23, 1914.

From: The Chief of Engineers, United States Army.
To: The Secretary of War.
Subject: Preliminary examination and survey of Michigan City Harbor, Ind.

1. There are submitted herewith, for transmission to Congress, reports dated January 18 and August 9, 1913, with maps, by Lieut. Col. George A. Zinn, Corps of Engineers, on preliminary examination

and survey, respectively, of Michigan City Harbor, Ind., authorized by the river and harbor act approved July 25, 1912, together with supplemental report on survey, dated December 8, 1913, by Maj. H. B. Ferguson, Corps of Engineers.

2. Michigan City Harbor is located on the southeasterly shore of Lake Michigan. The present project provides for a channel 15 feet deep below Chicago City datum from Lake Erie and Western Railroad bridge downstream to Lake Michigan, a distance of about 10,459 feet, with three turning basins, and for two entrance piers and a detached breakwater in the outer harbor. Of these works, all have been completed except the upper 1,300 feet of channel in the creek and 200 feet of the detached breakwater, these portions of the improvement having been postponed because not urgently needed. The total expenditures on this harbor to June 30, 1913, amounted to $1,784,964.12. The waterborne commerce has decreased from about 350,000 tons in 1882 to about 30,000 tons in 1912. As a result of his investigations, the district officer reaches the conclusion that the locality is worthy of improvement to the extent only of completing the present project, omitting that portion of the inner harbor above the third turning basin, increasing the depth of channel throughout to 18 feet below Chicago City datum, and maintaining existing structures. The division engineer states that it would appear that the dredging of the channel from the 18-foot contour in the lake to the angle about 500 feet above Franklin Street Bridge to 18 feet at low water (Chicago datum), will fully provide for any present and prospective needs of navigation; and such deepening only is recommended by him, the remainder of the present project channel to be dredged and maintained at 15 feet depth when and as commerce may require.

3. In his report on the survey the district officer submits an estimate of cost amounting to $22,400, covering the deepening of the channel to a point 500 feet above Franklin Street Bridge, and an estimate of cost for maintaining this channel, the detached breakwater, the easterly pier, and the westerly pier, amounting to $6,600 annually. In his supplemental report of December 8, 1913, the district officer recommends that the project provide for repair of the east pier at an estimated cost of $18,000, and that the abandonment of the old east pier and east breakwater be authorized, including such reduction of their height as may be considered desirable and economical in connection with securing stone for repairing the east pier. This recommendation of the district officer is concurred in by the division engineer except as to proposed reduction in height of the east breakwater.

4. These reports have been referred, as required by law, to the Board of Engineers for Rivers and Harbors, and attention is invited to its report herewith dated January 19, 1914. The board considers it advisable to maintain the principal existing structures at the harbor entrance. The harbor basin is used only for small craft and is purely a local matter, and in the opinion of the board any work that may be deemed necessary for the protection of the park or of the vessels should be done by local interests and not by the United States. It concurs with the division engineer in recommending that in abandoning the east breakwater and old east pier the city be permitted to keep these structures in repair if it desires to do so. The board recommends a modification of the existing project so as to provide

for an entrance channel 18 feet deep below Chicago datum from the 18-foot contour in the lake to a point about 500 feet above Franklin Street Bridge; for the maintenance of the channel, of the east and west piers, and of the detached breakwater; and for the closing of the 15-foot opening in the east pier at such time as the necessity therefor becomes apparent, at a total estimated cost, in round numbers, of $42,000 for first construction and $6,600 annually for maintenance.

5. After due consideration of the above-mentioned reports, I concur in general with the views of the division engineer and the Board of Engineers for Rivers and Harbors, and therefore report that the further improvement by the United States of Michigan City Harbor is deemed advisable to the extent of providing an entrance channel 18 feet deep below Chicago datum up to a point about 500 feet above Franklin Street Bridge, repairing the east pier, and closing gap therein if necessary, at a total estimated cost of $42,000, and maintaining this channel, the east and west piers, and the detached breakwater, at an estimated cost of $6,600 annually, the remainder of the present project channel of the inner harbor to be dredged and maintained at 15 feet depth when and as commerce may require. The entire estimated first cost of the work now proposed and one year's maintenance, aggregating $48,600, should be provided in one appropriation.

EDW. BURR,
Colonel, Corps of Engineers,
Acting Chief of Engineers.

REPORT OF THE BOARD OF ENGINEERS FOR RIVERS AND HARBORS ON SURVEY.

[Third indorsement.]

BOARD OF ENGINEERS FOR RIVERS AND HARBORS,
January 19, 1914.

To the CHIEF OF ENGINEERS, UNITED STATES ARMY:

1. Michigan City Harbor is situated about 38 miles southeasterly from Chicago. Improvement was begun by the United States in 1836, since which time, under various projects, there has been expended $1,780,000.

2. The harbor consists of two parts—an outer and an inner—which are divided geographically by Franklin Street Bridge, a short distance within the shore line. The inner harbor is formed by Trail Creek, which has been improved by dredging for a distance of about 9,300 feet and by the construction of three turning basins. The present depths range from 17 feet at the mouth to about 2 feet at the upper end.

3. The outer harbor is formed by several structures, including a detached breakwater, an east and west entrance pier, an outer harbor basin to the east of the east pier, and a dredged channel of entrance. About 550 feet from the shore line there is an opening in the east pier 15 feet in width which forms the entrance for small vessels to the harbor basin.

4. The present project provides for a channel 15 feet deep below Chicago city datum for a distance of about 10,459 feet, with three

turning basins in the inner harbor and for two entrance piers and an isolated exterior breakwater in the outer harbor. Of these works all have been completed except the upper 1,300 feet of channel in the creek and 200 feet of the detached breakwater at its southwest end, these incompleted portions having been postponed because not urgently needed. Frequent dredging has been required to maintain the project channel depth, and in order to allow for the annual shoaling dredging has been carried to a depth of 18 feet or more below the datum plane.

5. Michigan City has a population of about 22,000. It has several large manufacturing establishments and a number of smaller ones. The total annual shipments by all ways of transportation amount to about 294,000 tons and the receipts to 576,000 tons, making a total of 870,000 tons. Only about 27,000 tons of this is handled by water, the water-borne commerce having diminished from about 350,000 tons since 1882. There is but one regular packet steamboat line doing business at Michigan City, consisting of two boats which ply between Chicago and Michigan City, making one daily round trip each and carrying both passengers and freight. Between May 15 and September 1, 1912, they carried 250,000 passengers and a small amount of freight.

6. The district officer states that this transportation company does not provide a tariff sufficiently below that of the railroads to induce large shipments of package freight by water. These boats have a draft of 15 feet, and as this is the depth provided by the approved project it has been necessary in connection with maintenance to dredge to a depth of 18 feet, so as to insure the full 15 feet at all times. The district officer states that in order to admit bulk freighters to the inner harbor the channel would have to be increased in depth to 21 feet, the creek would have to be widened at sharp bends, and one railway and two highway bridges would have to be rebuilt with wider spans.

7. The district officer states with reference to the effect of additional improvement upon the commerce of Michigan City that only the 27,000 tons now handled by water, 30,000 tons of anthracite coal, and a small additional tonnage would be affected. He expresses the opinion in his report on preliminary examination that the locality is worthy of improvement only to the extent of completing the present approved project, omitting that portion of the inner harbor above the third turning basin, increasing the depth of channel throughout to 18 feet below Chicago city datum, and maintaining existing structures.

8. After a study of the report on preliminary examination and other available data the board reached the conclusion that the dredging of the channel from the 18-foot contour in the lake to the angle about 500 feet above the Franklin Street Bridge to 18 feet below Chicago datum would fully provide for the present and prospective needs of navigation, and it recommended an estimate for such work and for the maintenance of the channel, the detached breakwater, and the east and west piers. Such an estimate is submitted, from which it is found that the dredging will cost $22,400 and the maintenance of the several items mentioned $6,600.

9. The district officer states that if the harbor basin is abandoned it will be necessary to strengthen the east pier from the shore line out to the east breakwater and to close the 15-foot gap to prevent

sand from being washed into the entrance channel. These additional items of work are estimated in his report on survey to cost $8,257.

10. The district officer finds from the survey that to carry the 18-foot channel up to the third or upper turning basin would cost $91,000, and he states that the information now available indicates that such a large expenditure would not be justified. The total immediate appropriation required for the work proposed in the report on survey is $30,660 for construction and $6,600 for the first year's maintenance, making $37,260.

11. Subsequent to the receipt of the district officer's report on survey, a hearing was given in the office of the board on September 23, 1913, which was attended by Hon. H. A. Barnhart, Member of Congress, and a delegation of citizens from the locality. It was stated, in substance, at the hearing that the abandonment of the east breakwater would cause injury to valuable parking belonging to the city; that property owned by the United States Lighthouse and Life-Saving Establishments would be endangered; that the strengthening of the east pier at the cost proposed would be temporary only; that the repair of the east breakwater would not cost much more than the permanent strengthening of the east pier; and that the former was greatly preferred by local interests. The district officer was requested to investigate and report upon these various points, and attention is invited to his report thereon and to the remarks of the division engineer.

12. It appears that the harbor basin is shoaling in the vicinity of the city park and the Government property, and that no serious danger from erosion need be apprehended. A revised estimate for substantial repairs to the east pier is $18,000, while the repair of the old east breakwater is estimated to cost $84,000. The district officer states that it is not considered the duty of the United States to protect this park, whose existence precludes probable future use of the basin for a commercial harbor. He recommends the abandonment by the United States of the old east pier and east breakwater and the repair of the east pier at an estimated cost of $18,000, as against the original estimate of $6,500. He believes it to be advisable to lower the height of the old east breakwater and the old east pier, whereby stone may be secured economically for the repair of the east pier. The division engineer suggests the abandonment of the old east breakwater and the old east pier to the city and concurs in the recommendation of the district officer for the repair of the east pier at an estimated cost of $18,000, but does not favor the lowering of the old east breakwater and old east pier.

13. From all the information now in hand, it appears that although this harbor has had the benefit of fair transportation facilities by water for a number of years, the waterborne commerce has been decreasing and is now quite small, and there is nothing to indicate a material increase as a result of additional improvement. However, as the vessels now engaged in commerce at this port draw 15 feet, it is believed that the existing project should be modified so as to provide adequate depth for these boats, as this can be done at reasonable cost.

14. It is also considered advisable to maintain the principal existing structures at the harbor entrance, consisting of the east and west piers and the detached breakwater. The harbor basin is used only for small craft and is purely a local matter, and any work that may be

deemed necessary for the protection of the park or of these vessels should, in the opinion of the board, be done by local interests and not by the United States. The closing of the gap in the east pier would prevent any further use of harbor basin, and this does not appear urgent at this time, as the structures forming the basin will be of some service for a number of years. It is recommended that the city be permitted to keep these structures in repair if it desires to do so in order to protect its property and the small vessels using the outer basin. If this is not done and the necessity for closing the opening in the east pier becomes apparent, it can then be done, and it is believed that the funds necessary for this purpose, as well as for the repair of the east pier, should be available.

15. To sum up, the board recommends a modification of the existing project so as to provide for an entrance channel 18 feet deep below Chicago datum from the 18-foot contour in the lake to a point about 500 feet above Franklin Street Bridge; for the maintenance of the channel, of the east and west piers, and of the detached breakwater; and for the closing of the 15-foot opening in the east pier at such time as the necessity therefor becomes apparent, at a total estimated cost in round numbers of $42,000 for first construction and $6,600 annually for maintenance thereafter. The whole amount of the first cost of the work and of one year's maintenance, $48,600, should be made available in one appropriation.

16. In compliance with law, the board reports that there are no questions of terminal facilities, water power, or other subjects so related to the project proposed that they may be coordinated therewith to lessen the cost and compensate the Government for expenditures made in the interests of navigation.

For the board:

W. M. Black
Colonel, Corps of Engineers,
Senior Member of the Board.

PRELIMINARY EXAMINATION OF MICHIGAN CITY HARBOR, IND.

United States Engineer Office,
Chicago, January 18, 1913.

From: Lieut. Col. Geo. A. Zinn, Corps of Engineers
To: The Chief of Engineers, United States Army.
(Through the Division Engineer).
Subject: Report, preliminary examination, Michigan City Harbor, Ind.

1. The following report is submitted of an examination made in accordance with instructions contained in letter from your office dated August 3, 1912, and item in section 2, river and harbor act approved July 25, 1912, which item is as follows: Michigan City Harbor, Ind.

2. Michigan City Harbor is located in La Porte County, Ind., on the southeasterly shore of Lake Michigan, about 29 miles east by south from Calumet Harbor, about 23 miles easterly from Gary Harbor, and about 33½ miles S. W. ½ S. from St. Joseph Harbor, Mich. It comprises a portion of Trail Creek, which here flows into

Lake Michigan, and the area in the lake included within the lake shore and various harbor improvement works (see map herewith Exhibit A [1]) at and near the mouth of Trail Creek.

3. Trail Creek, with a total length of about 11 miles, has its source at a point almost directly east of its mouth, where the land is about 100 feet above lake level. The discharge of the creek is not known, but it varies considerably throughout the year and is sufficient to furnish power to two flour mills, one of which develops 100 and the other 200 horsepower, with capacities, respectively, of about 50 and 100 barrels of flour per day, and to a sawmill developing about 150 horsepower. Considerable quantities of sand and silt are brought down, which settle in its wider and deeper portions. The lower 9,300 feet, which has been improved by the United States Government, has a width of about 150 feet and three turning basins. The first turning basin is in the first bend in the river going upstream and incloses a circle 400 feet in diameter. The second basin is about 3,200 feet upstream from the first and is about 220 by 340 feet, with the river included. The third basin is about 3,200 feet upstream from the second and is about 340 by 400 feet. Of the 9,300 feet of improved creek, 6,180 feet of left bank and 6,820 feet of right bank are docked. A considerable portion of the docks, however, are old and dilapidated. At the present time there is a depth of about 17 feet below Chicago city datum (579.94 feet New York datum) at the mouth of the river and up to Franklin Street, 13 feet up to the Second Street Bridge (about 5,000 feet from the mouth), 12 feet to a point 800 feet above the Sixth Street Bridge (about 6,400 feet from the mouth), thence gradually growing shallower to about 2 feet at the third turning basin. Above the third turning basin the channel depth is about 2 feet, but the channel is so narrow and crooked that it is available for rowboats only. The creek is spanned by four bridges, which are, respectively, going upstream, as follows:

Franklin Street, a single-leaf bascule, 80 feet clear channel width, 11 feet vertical clearance when closed.

Michigan Central Railroad, about 1,850 feet above Franklin Street, center pier, swing, clear width west draw, 41 feet; east draw, 43.5 feet; 10 feet vertical clearance closed.

Second Street, about 370 feet above the Michigan Central Railroad, center pier, swing, clear width west draw 46.2 feet, east draw 45.5 feet, 7.17 feet clearance closed.

Sixth Street, 1,330 feet above Second Street, center pier, swing, clear width of each opening, 46 feet, 8.31 feet vertical clearance.

There is a fixed bridge a short distance above the improved portion of the creek.

4. The sharp bend in the river, 1,600 feet above Franklin Street, prohibits the passage of vessels longer than about 300 feet and the Michigan Central Railroad bridge prevents the passage of vessels having a beam greater than 43.5 feet, or say longer than 300 feet, and of greater capacity than about 3,000 tons. The depths in the creek above Franklin Street exclude vessels of over 2,000 tons capacity.

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[1] Not printed.

5. Michigan City Harbor, as previously stated, consists of two parts (see map herewith, Exhibit A); one part, known as the "inner harbor," consisting of a portion of Trail Creek as above described. The other part, which may properly be called the "outer harbor," and which has been so designated in projects of improvement and various acts of Congress, consists of the area in the lake included between the lake shore and the various works of improvement built by the United States Government at and near the mouth of Trail Creek. No definite line has ever been established as the limit between the inner and outer harbors, nor is it necessary to establish such a limit except, perhaps, for clearness of description, and the Franklin Street Bridge will serve for that purpose. The outer harbor includes, then, the creek from Franklin Street Bridge to its mouth. The channel at the mouth of the creek is protected by two piers, which are approximately parallel 225 feet apart. The east pier, measured from the present shore line, is 2,200 feet long, and its outer extremity is about 970 feet beyond the outer end of the west pier. Its outer section makes an angle with the main portion. The outer 1,100 feet is built of timber cribs with a width of 30 feet, the remainder is a pile structure with a width of 14 to 18 feet, with stone filling extending a few feet above the water level. At a point about 550 feet from the shore line there is an opening in the pier 15 feet in width and 7½ feet in depth below Chicago city datum, which affords the only means of entrance for boats to the "outer basin." This opening was originally 467 feet wide and was closed in 1904, in accordance with the recommendation of a Board of Engineers dated January 12, 1897, approved by the Secretary of War February 15, 1897. This recommendation was "to connect the east pier of the inner harbor to the east breakwater * * * to avoid the cost of repairs to the works surrounding the outer basin. It will also have a beneficial effect on the currents at the entrance to the inner harbor." The outer basin is formed by a portion of the east pier, the "east breakwater" 1,400 feet long, the old "east pier" 1,220 feet long, and the lake shore. A line was adopted by a board of engineers in 1880 as the southerly limit of the outer basin. (See map accompanying annual report, 1890.) The area included within this southerly boundary line and the three structures just named is 34.72 acres, and has a depth varying from 10 to 12 feet to nothing. The outer basin was constructed in accordance with the recommendations of a board of engineers in 1870 to provide a harbor of refuge. It was never dredged nor used for its original purpose, and the above quotation from the report of the board of 1897 shows that it forms no part of the present project, except so far as it may have been so by the act of June 25, 1910, which appropriated $65,500 for "continuing improvement and for maintenance, including repair and maintenance of the east breakwater."

6. It will, however, be necessary either to preserve this structure or to strengthen the pile portion of the east pier lying to the shoreward of the old east breakwater, because the pile structure is not strong enough to withstand the heavy seas to which it would be exposed if the breakwater were removed. The abandonment of the east breakwater would destroy the usefulness of the outer basin as a refuge for small craft which enter through the 15-foot opening,

would perhaps permit the property of the United States Life-Saving Station to be injured by storms, and expose the lake shore in the vicinity, which is used as a city park, and a small private pier.

7. The west pier, 1,470 feet long, is a pile pier structure having a width of 18 feet. A portion of this pier, 893 feet in length, was rebuilt in 1910–11 on a new alignment upon land donated by Michigan City for the purpose of widening the channel between the entrance piers. The entrance channel is also protected by a detached breakwater, 1,304 feet in length, having a direction SSW. 5/8 W., with its northeast end on a line with the harbor face of the east pier and 650 feet from it. The detached breakwater, the west pier, and the east pier (repaired during 1912) are in good condition, although the latter (pile portion mentioned above) is not in a condition to resist the direct effect of lake storms. The east breakwater and the old east pier are in an extremely dilapidated condition, some 50 feet of the outer superstructure of the latter having been entirely destroyed in November, 1912. The depth in the lake at the northeast end of the detached breakwater is about 24 feet, and between that point and the entrance channel (at north end of westerly pier) the depth decreases gradually to about 19 feet. The entrance channel between the piers has an available width of about 180 feet and an average depth of 17 feet.

8. Michigan City Harbor is fully exposed to storms from a northerly direction, the maximum unimpeded sweep from a little east of north being about 300 miles; all severe storms from the arc included between NNE. and NE. create hazardous conditions, including powerful and dangerous seas, and strong currents running across the harbor entrance fom west to east. Michigan City is thus one of the most exposed harbors on the lake. The lake shore in the vicinity is composed of fine sand piled up in large dunes. The lake bed is also sandy, so that during heavy storms sand is carried by wind, waves, and currents into the outer and inner harbors. Freshets in Trail Creek have very little effect on the water surface level of the harbor and do not produce an excessive current. Surface variations in Lake Michigan at Michigan City Harbor occur frequently and sometimes amount to 3 to 4 feet. This harbor is closed to navigation every year, generally about the beginning of December, by the formation of ice in the lake and creek and is open generally about the beginning of April. At other seasons of the year the harbor can be used by sail and steam vessels, except that it is almost impossible to enter or leave it during heavy storms from the north and northeast because of the relative location and width of opening between the detached breakwater and the east pier. Even if the gap has been successfully passed in entering, there is danger of grounding in the shallow water north of the west pier. Vessels can lie west of the Franklin Street bridge during storms, and would probably experience little difficulty in discharging cargo at the inner end of the entrance piers.

9. The improvement of this harbor was begun by the United States in 1836, after the city of Michigan City had expended $100,526.13 in initial work of improvement, purchase of a dredge, etc. Between that year and the present time various projects or plans of improvement have been adopted and modified from time to time. The total amount expended by the United States for original work and maintenance up to December 31, 1912, is $1,780,000. It is not necessary to describe these projects; a history of the improvement from its

initiation is given in the annual reports of the Chief of Engineers for 1898, Part IV, page 2489, and for 1908 at page 678. The present project, approved August 15, 1908, includes in the inner harbor a channel 15 feet in depth below Chicago city datum, and from 120 to 150 feet in width between docks where established by the city, from the Lake Erie & Western Railroad bridge downstream to Lake Michigan, about 10,459 feet, including an upper and middle turning basin and a lower turning basin at the last turn in the creek; in the outer harbor two entrance piers and an isolated exterior breakwater 1,500 feet long. Of these approved works, all have once been completed except the upper 1,300 feet of channel and the last 200 feet at the southwest end of the detached breakwater, and these have been postponed because not urgently needed and the available funds were required for repair of existing works. The funds available January 1, 1913, for works of improvement and maintenance are $49,000. This sum is to be expended in completing the project of 1908, including the repair of the old "east breakwater," which was added by the act of June 25, 1910. The present approved estimates do not include the maintenance of the east breakwater and the old east pier. Their proper maintenance would require entire rebuilding. It has been found necessary to resort to frequent dredging to maintain the project channel depth, and in order to allow for the annual shoaling dredging has been carried to a depth of 18 feet or more below the datum plane.

10. Michigan City, from which the harbor takes its name, has a population of about 22,000. It has several large manufacturing establishments and a number of smaller ones. The largest establishment is that of the Haskell & Barker Car Co., manufacturers of wooden and steel freight cars, which annually consumes about 100,000 tons of coal, receives about 350,000 tons of lumber, steel, iron, etc., and ships about 250,000 tons of freight cars per annum. The Ford & Johnson Company manufactures all kinds of chairs and settees, and ships and receives about 30,000 tons of freight. Other establishments manufacture shirts, dresses, gloves, mittens, interior finish, sash, doors, and other lumber products, water coolers, beer, etc. Certain manufactured articles are shipped to long distances; coal, lumber, etc., find a market at points within 200 miles, but Michigan City's tributary territory may be considered to be limited to very short distances east, south, and west. The total annual shipments by all ways of transportation from Michigan City are about 294,000 tons, and the total receipts about 576,000 tons. About 27,000 tons of this freight moves by water. Annual coal receipts at Michigan City are: Anthracite about 30,000 tons; bituminous, about 325,000 tons, the former from the Scranton (Pa.) district, the latter from Indiana, Ohio, West Virginia, and Illinois. A large quantity of timber of various kinds arrives at Michigan City by water from points in northern Michigan. The table of statistics, herewith (Exhibit B [1]), gives all the information available in this office covering the classification, tonnage, etc., of water-borne traffic. The accompanying report of Mr. Comfort gives additional information collected by special investigation. (Exhibit C.)

11. The table of statistics shows that if certain apparently unusual shipments of railroad ties in 1881 and 1882 and of posts in 1888

[1] Not printed.

are excluded, the annual commerce of Michigan City Harbor was at its maximum in 1882, and that since that date it has gradually diminished from about 350,000 tons to about 27,000 tons. The commodities having the largest average annual tonnage, excluding ties and posts, are lumber, salt, shingles, sand, iron, and lath. Since 1901 no iron is included in the statistics; since 1902 no coal. Salt and timber products appear in the statistics constantly since 1887. The other commodities noted in the table, viz, potatoes, coal, wood, and miscellaneous merchandise, vary greatly in amount from year to year.

12. Four railway lines enter Michigan City: (1) Michigan Central, (2) Pere Marquette, (3) Lake Erie & Western, (4) Chicago, Indianapolis & Louisville (Monon Route). The first two are east and west lines, the last two north and south lines. There are two interurban electric lines: First, Chicago, Lake Shore & South Bend Railway, extending from Chicago to South Bend, Ind., a total distance of 90 miles; and, second, Chicago, South Bend & Northern Indiana Railway, extending from Michigan City to South Bend via La Porte, Ind., a distance of about 35 miles. Michigan City is amply supplied with railway transportation connecting it with its immediate territory, as well as with all points in the United States. While the railways have tracks at various points along the water front, these tracks form in no sense common rail-and-water terminals. At various times railway ties, brought to Michigan City by water, have been transferred by hand directly into cars alongside the docks.

13. Lumber, salt, etc., arrive at Michigan City in steam or sailing vessels chartered for the trip and are discharged by hand at the dock of the consignee. There has been some difficulty in recent years in securing vessels small enough to enter the inner harbor. There is one tug available for towing vessels in and out.

14. There is but one regular steamboat line doing business at Michigan City—the Indiana Transportation Co. This company operates two boats between Chicago and Michigan City, making one daily round trip each and carrying both passengers and freight. Their two steamers are the *United States* and the *Theodore Roosevelt*. The former has a capacity of 2,200 passengers and 500 tons of freight; the latter 2,800 passengers and 200 tons of freight. Both have a draft of about 15 feet. They transported between May 15 and September 1, 1912, 250,000 passengers and 78 tons of miscellaneous merchandise to Michigan City and 985 tons from Michigan City. They take about 5,800 tons of coal at Michigan City and none at Chicago. The Indiana Transportation Co. owns a dock at Michigan City and rents a dock from the city of Chicago at Chicago. There are no special appliances for handling freight at either terminus.

15. Michigan City owns several pieces of water-front property, as shown on the accompanying map (Exhibit A), which might be used as water terminals for package and bulk freight.

16. Tariff rates between Chicago and Michigan City are as follows:

By Indiana Transportation Co.'s boats: Passenger, 50 or 75 cents round trip; freight, per 100 pounds, first class, 12½ cents; third class, 8 cents (average).

By rail: Passenger, $1.05; freight, first class, 14½ cents; second class, 13 cents; third class. 12 cents; fourth class, 10 cents; fifth class, 7½ cents; sixth class, 6½ cents.

By interurban lines: Passenger, 85 cents.

By express: Freight, per 100 pounds, 50 cents; over 100 pounds, one-half cent per pound. There appears to be no prorating or single bill of lading agreement or any other form of agreement between the Indiana Transportation Co. and the railway lines as to tariffs. The rail rates above given are under the eastern classification. Under the western classification for equal distances the following rates are found from Chicago: To Koster, Ill., 24.1, 19.6, 16.5, 13, 9, 9.2; and to Berryville, Wis., 25, 20, 15, 12, 8, 8½.

17. The rail rate on anthracite coal from the mines in Pennsylvania to Michigan City is $3.75 per ton ($2, mines to Buffalo; $1.75, Buffalo to Michigan City). The rail rate from the same points to Chicago is $3.50. The rail rates on bituminous coal to Michigan City are as follows: Ohio points, $1.65 per ton; West Virginia, $1.90; Illinois, $1.12; Indiana, $0.87 and $0.77. Water rates on lumber from Manistee, Menominee, Rapid River, and Empire, Mich., to Michigan City averaged about $1.75 per 1,000 feet b. m., equivalent to about 4.4 cents per 100 pounds. Rail rates on lumber from points in Mississippi and Louisiana, Texas, and Arkansas range from 24 to 26 cents per 100 pounds.

18. The small difference between the boat and rail rates between Chicago and Michigan City, combined with the greater accessibility of the railway freight house (the boat dock can only be reached by crossing all railway tracks and the creek), may explain the comparatively small amount of freight that is carried by the Indiana Transportation Co.'s boats. The lack of depth in the harbor may explain why no anthracite coal is brought by water to Michigan City, and the diminishing quantity of timber to be found in the vicinity of lake ports may explain the decrease in lumber receipts.

19. So far as transportation facilities alone are concerned, Michigan City is already well supplied with them, being able to ship and receive merchandise from all directions and all points. Package freight can be shipped by water only to Chicago, and thence by transfer to other vessel lines, if its destination is beyond Chicago. It is not clearly apparent why packet lines have not been established between Michigan City and other lake ports, but if the quantity of freight carried by the Indiana Transportation Co.'s boats may be used as a criterion, it is evident that a packet line could not be profitably operated between Michigan City and other ports unless the passenger traffic were large. Chicago is the only city with sufficient population near enough to Michigan City to furnish a large excursion business. The Indiana Transportation Co. does not provide a tariff sufficiently below that of the railways to induce large shipments of package freight by water.

20. Michigan City requires for her manufacturing establishments certain commodities which are shipped in bulk, such as coal, lumber, salt, and pulp wood. Economical bulk freight carriers on the Lakes now have a draft of from 17 to 19 feet, a length of 300 feet and over, and beam of 43 to 48 feet. These vessels could not reach existing docks at Michigan City above Franklin Street Bridge. It is more than probable that if the channel permitted, such vessels would bring anthracite coal from eastern lake ports, lumber from western lake ports, and perhaps take away cargoes of grain, for Indiana is a large grain producing State. In former years, those commodities were so shipped in small vessels.

21. The Indiana Transportation Co.'s boats have a draft of 15 feet. The present approved project provides for a depth of 15 feet, and if a greater depth had not been provided in former years, those boats would probably have been able to run but a short period each year. In order that there should be no question as to sufficient depth for these vessels at all times, the project depth should be increased to 18 feet. No other changes are necessary in the present project to provide for the package-freight trade.

22. In order to admit bulk freighters to the inner harbor, its channel would have to be increased in depth to 21 feet, the creek would have to be widened at the sharp bend in the river 1,600 feet above Franklin Street, and the Michigan Central Railway and Second and Sixth Street highway bridges would have to be rebuilt with wider spans. It is probable that much of the present docking would have to be rebuilt because it was originally intended for a channel depth of only 15 feet. The bulk-freight business, and in fact all the water traffic, could be carried on at the lake front if a sufficient frontage were protected by breakwaters similar to those at Milwaukee and Chicago. The outer basin is not large enough for this business, its protecting structures are in very bad condition, and the lake shore is now a city park; hence the outer harbor would have to be established to the westward of the present harbor entrance, and its protecting breakwaters would be of considerable length and cost. A plan for an outer harbor is suggested by the mayor of Michigan City in a communication herewith. (Exhibit D.[1]) An outer harbor would not only provide a place for loading and discharging vessels, but also a harbor of refuge. In order to load and discharge vessels in an outer harbor, it would be necessary to provide wharves, warehouses, machinery, railway tracks; in fact, complete terminal facilities.

23. With proper terminal facilities Michigan City might become a port of transshipment between rail and water lines, but there is no evidence of any desire on the part of the railways to secure combined rail-and-water terminals at Michigan City, and it is useless to speculate as to what would happen if such common terminals were constructed.

24. There is no doubt that with a channel sufficiently large to permit large lake vessels (say 21 feet in depth) to reach the existing docks along the inner harbor or with an adequate outer harbor, cargoes of anthracite coal would arrive and the receipts of lumber might increase, although shipments of lumber have decreased at all lake ports on account of the increasing scarcity of lumber in the vicinity of the lake. Perhaps, also, shipments of grain might be made at Michigan City Harbor, but in view of the absence of elevators and the control which the railroads now have over grain rates, something more radical than the mere deepening of the harbor would have to occur to bring this about. It is hardly probable that any reduction in present rates on lumber results from waterway improvement, since these rates are now very low. Again, to what extent waterway improvement would result in an increase in general waterway commerce, or in reduction in freight costs to or from Michigan City, it would be difficult to predict, because Michigan City and its tributary territory have no special advantages in the way of mineral or agricultural productions, labor supply, proximity to markets, or other

[1] Not printed.

things which usually form the basis for a prediction of future manufacturing or productive growth. It is questionable whether the present commerce of Michigan City—except coal, lumber, and salt—would be affected by waterway improvement. There has no doubt been a constant growth in manufactures at Michigan City, but the raw materials to a very large extent and the manufactured products have their sources of supply and their markets at points not accessible by water transportation. It may be assumed, therefore, that of the present commerce of Michigan City the 27,000 tons of water traffic, the 30,000 tons of anthracite coal, and a small proportion of the remaining tonnage would be affected by an improved inner harbor or the construction of a new outer harbor.

25. It is estimated that anthracite coal can be delivered by water alongside the dock at Michigan City at a cost of $1 less per ton than if delivered by rail, fixed charges on the cost of harbor improvement and terminal facilities not included. With these fixed charges included, it is probable that the cost per ton via water will differ but little from that via rail. The exact cost of the improvements outlined above as necessary to provide a satisfactory inner or outer harbor can only be ascertained by a survey made especially for the purpose, the available data not being sufficient.

26. In view, however, of the absence of modern water terminal facilities, of the uncertainty of their profitable operation, whether installed by private individuals or by the municipality, of the recent decline in water-borne commerce brought about either by natural causes or by the artificial effect of rail and water rates, which would in no way be influenced by waterway improvement, I am of the opinion that Michigan City Harbor is worthy of improvement to the extent only of the completion of the present approved project, omitting that portion of the inner harbor above the third turning basin, which has not yet had any work done upon it, increasing the depth of channel throughout to 18 feet below Chicago city datum (which will permit the entrance of a large number of lake vessels in the coal trade), and including the maintenance of the existing structures.

27. The work involved by the above recommendation is as follows: (1) Extending the detached breakwater to its project length of 1,500 feet; (2) repair and maintenance of the detached breakwater, east pier, west pier, east breakwater, and old east pier; (3) dredging a channel from the lake to the third turning basin, including the three turning basins as now laid out, the channel to have a depth of 18 feet below Chicago datum, and a width equal to the width between two lines drawn approximately parallel to the present dock lines and 20 feet from them. If dredging is required in the lake beyond the extremities of the piers, the channel should increase in width from 200 feet at the pierhead to about 500 feet at the opening between the east pier and the detached breakwater.

28. If the above recommendation is approved, I would further recommend that a survey be made for the purpose of preparing an estimate of cost of the proposed work, no data being available for the purpose.

29. There is no question of water-power development, drainage, etc., connected with this improvement.

GEO. A. ZINN.

[First indorsement.]

OFFICE DIVISION ENGINEER, LAKES DIVISION,
Buffalo, N. Y., February 1, 1913.

To the CHIEF OF ENGINEERS:

1. Forwarded.

2. This report has been discussed with the district officer, and as result thereof recommendation differing from that expressed by him in paragraphs 26 and 27 herein is made as follows:

3. It appears from information furnished by the district officer that the present project for improvement is not clearly defined in the records of his office, especially as to the continuance and maintenance of the "east breakwater" and "old east pier," which form the "outer basin" east of the east channel pier, and as to the plane of reference for channel depth.

4. It is not apparent wherein the maintenance of this outer basin for the protection of city property and limited navigation by small motor boats can be considered as anything more than expenditure for a purely local interest, and such maintenance is not recommended.

5. In order to maintain the present project depth of 15 feet at low water (Chicago city datum), 1.7 feet below mean lake level, it has been necessary to dredge to 18 feet to avoid frequent redredging. From this it is evident that to maintain a channel 18 feet deep it would be necessary to dredge to 21 feet or more, and that the maintenance of such a channel to the limit recommended by the district officer would be very costly. The only commerce involved is a small amount of coal and package freight, which is stated in the report to be dependent upon the large summer excursion business to and from Chicago, carried on by one company. This traffic has not, as stated in paragraph 9, been sufficient to need the completion of the upper 1,300 feet of the channel, or, as shown on the map, the maintenance of the channel to full depth above Franklin Street Bridge.

6. It would appear that the dredging of the channel from the 18-foot contour in the lake to the angle about 500 feet above Franklin Street Bridge to 18 feet at low water (Chicago datum) will fully provide for any present and prospective needs of navigation, and such deepening only is recommended, the remainder of the present project channel to be dredged and maintained at 15 feet depth when and as commerce may require.

7. With the exceptions above noted, in modification of items (2) and (3) in paragraph 27, the recommendations of the district officer are concurred in.

8. A survey is recommended, in order that the existing project and such modifications thereof as may be finally recommended may be accurately defined, with estimate of cost.

J. G. WARREN,
Colonel, Corps of Engineers.

[Third indorsement.]

BOARD OF ENGINEERS FOR RIVERS AND HARBORS,
February 24, 1913.

To the CHIEF OF ENGINEERS, UNITED STATES ARMY:

It appears from the history of this port that although there has been an expenditure of $1,780,000 for its improvement, the waterborne commerce is very small and is, with the exception of one or two

recent years, very much less than at any time during the past 30 years. It does not seem that any extensive modification of the present project or any large increase in expenditures are justified by present and prospective commerce. The board is inclined to agree with the division engineer "that the dredging of the channel from the 18-foot contour in the lake to the angle about 500 feet above Franklin Street Bridge to 18 feet at low water (Chicago datum) will fully provide for any present and prospective needs of navigation." The board recommends that the district officer be authorized to prepare an estimate for such work, and for the maintenance of the channel, of the detached breakwater, and of the east and the west piers.

For the board:

WM. T. ROSSELL,
Colonel, Corps of Engineers,
Senior Member of the Board.

SURVEY OF MICHIGAN CITY HARBOR, IND.

UNITED STATES ENGINEER OFFICE,
Chicago, Ill., August 9, 1913.

From: The District Engineer Officer.
To: The Chief of Engineers, United States Army
(Through the Division Engineer).
Subject: Survey of Michigan City Harbor, Ind.

1. The following report is submitted of a survey at Michigan City Harbor, made in accordance with instructions contained in letter from Office of the Chief of Engineers, dated March 1, 1913. The survey was made in June, 1913, and covered the entire present project of the improvement of this harbor. The map of the survey is herewith in two sheets marked "Sheet 1" and "Sheet 2."

2. From information thus secured the following estimates have been prepared in accordance with the views expressed by the division engineer and the Board of Engineers for Rivers and Harbors, in their indorsements of February 1 and February 24, 1913, respectively, on preliminary examination report dated January 18, 1913:

(*a*) Dredging from deep water at the entrance of the harbor (limits of dredging indicated on the map), to a point 500 feet above Franklin Street Bridge, to a depth of 18 feet below Chicago city datum, which is 1.44 feet above United States Lake Survey Standard low water (an allowance for overdepth dredging of 1.5 feet is included), for an average width of 185 feet between harbor piers, 286 feet in lower turning basin, and 110 feet above Franklin Street Bridge:

102,000 cubic yards sand and clay, at 20 cents	$20,400
Contingencies, about 10 per cent	2,000
Total	22,400

(*b*) Maintenance per annum:

Channel	$2,700
Detached breakwater	1,400
Easterly pier	1,000
Westerly pier	1,500
Total annual maintenance	6,600

(*c*) In case the harbor basin is abandoned as part of the project of improvement and the East Breakwater and Old East Pier allowed to decay, it will be necessary (1) to strengthen the East Pier from the shore line out to the East Breakwater in order to enable it to withstand the heavy seas of this part of Lake Michigan to which it will then be exposed, and (2) to close the gap of 15 feet in the East Pier to prevent sand from being washed by waves and currents into the entrance channel of the harbor. It is estimated that these two items will cost as follows:

Strengthening of East Pier	$6,500
Crib for filling 15-foot gap	1,007
Add 10 per cent for contingencies	750
Total for East Pier	8,257

3. The total immediate appropriation required for carrying out these changes is $30,660, and the annual maintenance will be $6,600. The work proposed can readily be completed in one working season, and the initial appropriation should include these two amounts, or a total of $37,260.

4. The survey shows that the cost of dredging an 18-foot channel from a point 500 feet above the Franklin Street Bridge to and including the third or upper turning basin will be $91,000, and no new information has been secured which would appear to justify such a large expenditure for commerce which is entirely prospective. A table[1] is submitted herewith showing the water-borne commerce of Michigan City Harbor from April 6, 1913, to July 14, 1913, attention being invited to the column marked "Point of delivery in harbor."

GEO. A. ZINN,
Lieut. Col., Corps of Engineers.

[First indorsement.]

OFFICE DIVISION ENGINEER, LAKES DIVISION,
August 18, 1913.

To the CHIEF OF ENGINEERS:

Forwarded, concurring in the opinion of the district officer, that Michigan City Harbor, Ind., is worthy of improvement by the General Government, as summarized in paragraph 3 herein.

J. G. WARREN,
Colonel, Corps of Engineers.

SUPPLEMENTAL REPORT ON MICHIGAN CITY HARBOR.

BOARD OF ENGINEERS FOR RIVERS AND HARBORS,
Washington, D. C., September 25, 1913.

From: Board of Engineers for Rivers and Harbors.
To: The Chief of Engineers, United States Army.
Subject: Stenographic record of hearing with reference to Michigan City Harbor, Ind.

1. The board has had under consideration the reports of the district officer on preliminary examination and survey, respectively, of Michigan City Harbor, Ind., and in connection therewith gave a hearing at this office on September 23, 1913. It is recommended that the stenographic record of this hearing, which is transmitted herewith,[1] be forwarded to the district officer for his information and with request that

[1] Not printed

he give his views regarding the essential points recorded therein. These may be summarized as follows:

2. It was stated that the abandonment of the east breakwater would seriously injure valuable parking belonging to the city which had been built with the expectation that the protection afforded by the Government breakwater would be continued; that there is valuable property in the harbor basin belonging to the United States Lighthouse Establishment and Life-Saving Station, which would be endangered; that the strengthening of the east pier, at an estimated cost of $6,500, as proposed by the district officer, was thought to be in the nature of temporary repairs only, and not what would be required to guard against wave action if the east breakwater were abandoned; that to make this section secure would require full-width crib work at considerably greater cost; that the repair of the east breakwater would not cost much more than permanent strengthening of the east pier; and that the former is fully warranted by the commercial and other interests of the locality.

3. It is recommended that in his further report the district officer include an estimate for the repair of the east breakwater and give an expression of his views as to the advisability of doing this instead of making the proposed repairs to the east pier.

For the board:

W. C. Langfitt,
Lieut. Col., Corps of Engineers,
Member of the Board.

[First indorsement.]

Office Chief of Engineers,
Washington, October 3, 1913.

To the District Engineer Officer:

Inviting attention to the foregoing letter of the Board of Engineers for Rivers and Harbors and the accompanying stenographic record of public hearing, the district officer is requested to submit a report, in duplicate, and through the division engineer, containing the information desired by the board and referred to in paragraphs 1 and 3 of its letter. By command of the Chief of Engineers.

W. Kelly,
Major, Corps of Engineers.

[Second indorsement.]

District Engineer Office,
Chicago, Ill., December 8, 1913.

To the Chief of Engineers
(Through the Division Engineer).

1. Returned. The works at Michigan City Harbor have been examined. The following report covering the points required is submitted.

2. *Injury to the park.*—A comparison of present shore line and soundings in the vicinity, as they exist at present and as they are indicated by the old east pier and sand deposits near the old east breakwater, shows that the shore line is building lakeward and into the basin. Were the whole of the old east pier and the old east breakwater removed and the new east pier left intact, the shore line would build out and increase the park area rather than injure same. While in this process of building there would at times be local scour-

ing, the general result through a course of years would be building. The very shoal water near the shore line and the distance to which shallow water—that is, less than 12 feet in depth—extends to the north will prevent very serious erosion. Such minor erosion as is liable to occur near lighthouse property could be entirely prevented by very inexpensive rubble shore protection. It is not considered the duty of the United States to protect this park whose existence precludes probable future use of the basin for commercial harbor. The sand necessary to fill this basin could be removed for about $40,000.

3. *Injury to the United States property belonging to the Lighthouse and Life-Saving Departments.*—The same general tendency above noted holds, and the same remedy is applicable. While the shore line along this property has not built out as along the park, the shoaling of basin adjacent is very marked, the 5-foot contour having moved into the basin 250 feet since 1886.

4. The inner east pier should be strengthened in a substantial manner whether or not the old east breakwater is repaired, unless some 600 feet of the old east pier is also rebuilt, when this inner pier could be removed. The recent gale destroyed about 270 feet of north end of this pier. To prevent further damage, the remainder of this east pier was repaired, at a cost of about $2,000, by anchoring it more securely in general manner proposed in estimate for strengthening whole pier for $6,500. This amount would have been sufficient, except for this recent damage. The present estimate for completing repairs to the pier is $18,000. This pier must resist (*a*) wave action or (*b*) difference in head in basin and channel. Wave action is small and practically the same whether east breakwater is repaired or not. Higher head in basin than in channel probably produced recent damage, and could be prevented only by making breakwater and old east pier sufficiently high and strong as to absolutely prevent seas from entering basin. As to the relative cost for repairing the remainder, or the old east breakwater, it is simply a question between a pier 1,100 feet long or a breakwater 1,400 feet long and pier 600 feet long.

5. The commerce of this harbor being 27,000 tons, it seems that all commercial needs will be cared for by securing and maintaining an 18-foot channel, and, in my opinion, this should be accomplished in the most economical manner. The maintenance for last four years amounts to $1.13 per ton of this annual commerce. The interest, at 4 per cent on total expenditure, amounts to $2.15 per ton on this annual commerce.

6. The estimate for repairing the old east breakwater is $84,000. This estimate is based on cost of similar work at other places and provides for mass concrete superstructure. The estimate for repairing 600 feet of old east pier is $24,000.

7. The bottoms of cribs of breakwater are at about elevation −22. The depth of water along inner side averages about 3 feet; along outer side about 8 feet. The original depth in 1882 was from 20 feet to about 16 feet. This pier was not seriously disturbed by the recent extraordinary storm and will probably remain in satisfactory condition for six or seven years without further repairs. However, the top of this old breakwater is some 9 feet high above the water surface, and is consequently exposed to terrific blows from high seas. Were the height reduced to 3 feet or lower, it is believed that the beneficial effect would be as great as it now is; that the danger of

rupturing the large section would be avoided; that during medium storms the deposits adjacent to the breakwater would be increased, and it would eventually be embedded in a sand dike; and that more rapid accretion would result along shore of basin and along new east pier, which will become in appearance, as it now is in fact, a simple revetment. If this old pier were so reduced in height, some of the stone could be distributed alongside of it and some could be used in strengthening the new east pier.

8. It is recommended that the project provide for repair of east pier at an estimated cost of $18,000, and that the abandonment of old east pier and east breakwater be authorized, and it be provided that their height may be reduced as may be considered desirable and economical in connection with securing stone for repairing east pier.

H. B. FERGUSON,
Major, Corps of Engineers.

[Third indorsement.]

OFFICE DIVISION ENGINEER, LAKES DIVISION,
Buffalo, N. Y., December 13, 1913.

To the CHIEF OF ENGINEERS:

1. Forwarded.

2. The structures and basin herein referred to are shown in detail on sheet 1 of the map with report of survey.

3. As shown in the minutes of hearing herewith, the interested parties desire the protection not only of the city park lands, but of the basin as an important feature of the park for pleasure boating.

4. Substantial repair of the east breakwater and old east pier, which structures are essential to the preservation of the basin and park, is estimated by the district officer at $108,000.

5. As shown on the map, however, these structures do not fully prevent shoaling of the basin by sand infiltration, as stated in paragraph 4 of first indorsement on the preliminary examination report:

> It is not apparent wherein the maintenance of this outer basin for the protection of city property and limited navigation by small motor boats can be considered as anything more than expenditure for a purely local interest, and such maintenance is not recommended.

6. The east pier must be maintained, in any case, as a protection to the entrance channel along it. Such maintenance (repair) is now estimated by the district officer at $18,000, instead of $6,500 originally estimated, but may be considered as justifiable in the interests of navigation.

7. The proposed cutting down of the east breakwater, as proposed by the district officer, is not considered justifiable. It would result in the obliteration of the basin, a much-desired park feature, and would not materially reduce the cost of repair and maintenance of the east pier.

8. The abandonment of the east breakwater and old east pier to the city would appear to be the more reasonable expedient, all conditions considered.

9. The recommendation of the district officer in paragraph 8 of second indorsement is therefore concurred in only as to the repair of the east pier at an estimated cost of $18,000.

J. G. WARREN,
Colonel, Corps of Engineers.

[For report of the Board of Engineers for Rivers and Harbors, see p. 3.]

EXHIBIT C.

ENGINEER OFFICE, UNITED STATES ARMY,
Chicago, Ill., October 14, 1912.

From: C. I. Comfort, clerk.
To: Lieut. Col. George A. Zinn, Corps of Engineers.
Subject: Report on industrial conditions at Michigan City, Ind.

In compliance with instructions contained in your letter of September 17, 1912, I have to report that I visited Michigan City, Ind., from September 19 to 22, inclusive, made between 35 and 40 calls on industrial plants, firms, and individuals in that city, securing practically all the information sought with the exception of three cases, which I have estimated in the summary.

In addition to the main text there have been added to this report the following aids and guides to its better understanding:

An index arranged alphabetically with page numbers is next attached.

A short sketch of Michigan City, the result of my own personal observations, interrogations, etc., to be found at page 32;

A complete set of the questions from your letter of instructions is at page 32;

A tonnage summary of the information secured from the various plants and firms visited, alphabetically arranged, and paged, is at page 33; and

A map[1] of Michigan City, showing the locations of the plants and firms mentioned herein, ends the report.

C. I. COMFORT.

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[1] Not printed.

LIST OF QUESTIONS FROM LIEUT. COL. ZINN'S LETTER OF INSTRUCTIONS USED TO OBTAIN THE FOLLOWING INFORMATION.

(1) The annual tonnage of all kinds of freight received, including coal and other fuel.
(2) Names of principal items of freight received.
(3) The annual tonnage of all kinds of freight shipped.
(4) Names of principal items of freight shipped.
(5) Where are the raw materials obtained.
(6) The destination of freight and manufactured goods.
(7) Annual tonnage of coal and other fuel consumed.
(8) In general, anything which would tend to show the advisability of further improving this harbor, the character of improvement desired, and the points where it should be improved.
(9) The benefits to be derived, if any, should an artificial waterway be constructed from Lake Erie at or near Toledo, Ohio, to the southerly end of Lake Michigan by way of Maumee River and the city of Fort Wayne, Ind., or other practicable route.
(10) Average number of employees.

REPORT ON INDUSTRIAL PLANTS, FIRMS, ETC., AT MICHIGAN CITY, IND.

Reliance Manufacturing Co.—Shirts.—The oldest and largest of the two shirt factories in the city, having been established some 14 or 15 years, and their commodious building (80 by 250 feet) is located on a large triangular plat of land (the two sides of which measure 600 and 750 feet, and the base 250 feet), on the western side of the city, just across State Street from the Ford & Johnson chair factory. The approach to their factory is made very attractive by a well-kept lawn, flowers, etc., the only attempt at such well-merited embellishment that the writer noticed in connection with the manufacturing establishments of Michigan City. This plant makes what is known as workingmen's shirts exclusively, and employs upward of 500 employees, nearly all of whom are young women. This company wishes to enlarge and increase their output and will do so as soon as they have any assurance of obtaining the additional help required.

The following statements were furnished by their superintendent, Mr. J. L. Staufer:
(1 and 2) Receive annually about 2,000 tons of cotton piece goods and coal.
(3 and 4) Ship out about 1,000 tons of manufactured shirts.
(5) Coal is obtained in Virginia and the cotton goods in Rhode Island and Connecticut.
(6) Ship the manufactured goods throughout the West.
(7) Consume 1,000 tons of coal.
(9) Cheaper freight from Toledo, as most of our goods come through Toledo.
(10) Five hundred employees.

The Ford & Johnson Co.—Chairs and settees.—This is a very large plant for the manufacture of all kinds of chairs and settees and is located on the western side of the city between the State prison and the car works, where they have some 16 acres of land well covered with large buildings. This establishment ranks second in size, importance, and number of men employed in Michigan City, and has been in existence as a chair factory for 40 years. They also have a large salesroom establishment in Chicago, and issue to the trade large general catalogues and supplements. Are well provided with railroad facilities and own their own special box freight cars, 10 in number, for the transportation of their finished goods. They contemplate making some needed improvements in the near future.

Their general manager, Mr. William E. Murphy, readily responded to the writer's request and furnished the following (next attached) original report, which he went to some trouble to compile.

THE FORD & JOHNSON CO.,
Michigan City, Ind., September 23, 1912.

DEAR SIR: Referring to our conversation of last Saturday, beg to answer your inquiries as follows:
(1) About 17,000 tons.
(2) About 12,000 tons of lumber, 3,000 tons of coal, and 2,000 tons of oils, finishing materials, and general supplies.
(3) About 10,500 tons.
(4) Chairs, settees, and car seats.
(5) Principally from the States situated between the Atlantic Ocean and Mississippi River, the greater proportion coming from Indiana, Ohio, Michigan, and Arkansas.

(6) United States, Canada, and foreign countries.
(7) About 3,000 tons of coal and wood.
(8) For the safety of boats entering this harbor with cargo and also for the convenience of the immense summer excursion traffic which amounts to from 200,000 to 300,000 persons annually.
(9) We believe it would reduce the rates of transportation as a large percentage of our incoming freight could come by the proposed channel. We further believe it would reduce the inconvenience of shortage of cars, strikes, and other blockades which the railroad companies are subject to, and we earnestly recommend the construction of the proposed canal.
(10) Under normal conditions about 700.

Yours, respectfully,

ELMER W. STOUT,
Trustee of the Ford & Johnson Co. in Bankruptcy,
By WM. E. MURPHY.

Mr. C. I. COMFORT,
Chicago, Ill.

Haviland Bros.—Coal, etc.—Have a coal, wood, feed, and storage business, which has been in existence for 12 years. Their coal and wood yard is located at the foot of Sixth Street on a lot 100 by 150 feet in size, part of which is on the water front with a dock in good condition. Their storage house (50 by 85 feet) is located at 120 Michigan Street. This firm contemplates enlarging their business considerable for next season's work.

Mr. W. C. Haviland, a member of the firm, sent in the following replies to the questions submitted:

(1) We handle between 3,700 and 4,000 tons annually.
(2) Coal, wood, hay, straw, oats, and corn.
(3) About 100 tons.
(4) We ship principally furniture, pianos, etc.
(5) Coal from Ohio, Indiana, West Virginia, New York, Kentucky, and Illinois. Grain and hay from Indiana and points in the South.
(7) We retail about 3,500 tons of coal and about 10 cars of wood.
(8) Referring to our harbor: It is too shallow for coal barges to get to our dock at Sixth Street bridge. Under the present conditions it is too expensive to handle coal by water. We are looking forward to the coming of the deep waterway with much interest.
(9) We believe that the new waterway would benefit the people of this community wonderfully in the handling of coal, owing to the high freight rates and the large amount of coal that is stolen in transit. This canal would benefit us considerable as we are located on the harbor at Michigan City and could handle about all of our coal that way.
(10) Twelve.

Ph. Zorn Brewing Co.—Beer.—This is the only brewery in this locality, and is quite an old establishment, dating back to sometime prior to 1871. Is located at Ninth and York Streets, and have an entire city block (330 by 330 feet). Their present daily capacity is from 65 to 75 barrels, but they contemplate making some improvements this coming winter that will enable an increased output.

Their bookkeeper, Mr. William Smith, briefly summarized their present business as follows:

(1 and 2) Receive about 1,850 tons of malt, hops, and coal.
(3 and 6) Make no rail or boat shipments, all output is teamed out for local consumption.
(5) Ohio, Wisconsin, and Indiana.
(7) Consume about 1,200 tons of coal.
(10) Fifteen.

B. Kronthal & Co.—Shirts and dresses.—Have a small but thriving factory at the corner of Pine and Detroit Streets, and contemplate enlarging in the near future. One of the members of the firm supplied the following data of their present commerce:

(1 and 2) Receive about 1,000 tons of cotton, woolen goods, and coal.
(3 and 4) Ship out about 850 tons of shirts and dresses.
(5) East, South, and West.
(6) North, East, South, and West.
(7) One hundred and fifty tons.
(9) A direct water route from the east and south, like the Erie Canal, would reduce freight charges very considerably.
(10) Two hundred.

Indiana State Prison—Twine, monuments, and leather goods.—This is one of the penal institutions of the State of Indiana, and has been in existence since 1860. It is located on the western side of the city, where the State has a reservation of 100 acres of land. The institution itself incloses a space about 900 by 1,200 feet, and can accommodate about 1,250 convicts. At the time of the writer's visit they had 1,145. They have their own pumping station on the lake front for supplying an independent water supply, also have a spur from the Michigan Central Railroad tracks extending into the institution for delivering materials and supplies and taking away manufactured goods.

It may seem strange to the casual reader that a penal institution should enter the industrial or commercial field, but it has been found to be a good venture for both State and convict wherever tried.. This particular institution has been manufacturing large quantities of binder twine for the State since 1905. Four years ago stone cutting or making of monuments was introduced under the contract system; and some two years ago, the manufacture of leather goods and chairs was begun under the same system, so that now the output from this place forms quite an important factor in the commerce of Michigan City.

Mr. E. J. Fogarty, warden, and Mr. W. H. Daly, clerk, obligingly supplied the following tonnage information:

(1 and 2) Annually receive about 20,000 tons of coal, stone, leather, sisal, food supplies, and building materials.

(3 and 4) Ship out about 5,000 tons of binder twine, monuments, and leather goods.

(5) Yucatan and the United States in general, but more particulary from Indiana, Illinois, Oklahoma, and Vermont.

(6) Ship manufactured goods all over the United States, but more especially to Indiana, Ohio, Michigan, and Illinois.

(7) Twelve thousand tons.

(9) It appears that freight rates would be reduced materially by water route, and be advantageous in the procurement of material and supplies, and the shipment of finished product.

(10) Seventy-five employees. (The convicts who make the articles not being wage-earners, are not considered.)

Henry Lumber Co.—Lumber.—Do a general lumber and mill dressing business. Are located on the east bank of the harbor, commencing at the Sixth Street bridge and extending for over 1,000 feet along the water, the yard being from 200 to 500 feet in width at places. The entire space is utilized and they have a large stock on hand. All their lumber is received by schooners, but only about one-half of the long dock can be used, the other half being in very bad condition. They inform me that one of their contemplated improvements is the early repair of this dock. Mr. R. A. Rogers, the secretary and treasurer, furnished the following figures and information:

(1 and 2) Receive 19,875 tons of rough lumber by boat and 125 tons of other lumber by rail.

(3 and 4) Shipped out by rail and team.

(5) The rough lumber all comes by boats from northern Michigan and the balance by rail from the South.

(6) Shipments are made to Illinois, Indiana, and Ohio.

(9) Michigan City would naturally be west of the proposed canal for reasons too numerous to mention.

(10) Thirty-five.

Northern Indiana Gas & Electric Co.—Light and power.—This corporation maintains a power house, office, display and sales room in this city, similar to their establishments in Hammond and East Chicago, and furnish the same kind of services—gas and electricity—to this city. Their power house is located on the bank of the upper inner harbor, where they have about two acres of land, with about 400 feet of water frontage and the usual railroad siding. The office and sales room are located in the retail store district, at No. 521 Franklin Street.

Mr. C. N. Chubb, their resident manager, furnished the following with reference to their business:

(1 and 2) Receive annually about 22,500 tons of coal, oil, pipe and fittings, gas and electric-lamp fixtures, and other supplies.

(3 and 4) Ship out about 1,000 tons of coke, the rest being all local consumption.

(5) The raw materials are obtained in Pennsylvania, West Virginia, Indiana, and Illinois coal fields; oil from the Indiana oil fields; manufactured material from Pittsburgh and Philadelphia, Pa., Pittsfield, Mass., and Birmingham, Ala.

(6) Manufactured goods are shipped to Chicago.

(7) Twenty thousand tons.

(8) The upper harbor should be dredged out so that freight could be landed at our electric station. There are thousands of feet of idle dock that would be utilized if harbor and turning basin were dredged out.

(9) Great benefit would result to manufacturers who use coal for fuel, due to an all-water route and consequent less freight rate.

(10) One hundred.

O. W. Gotto—Fuel, flour, and feed.— Has a very flourishing business 8 years old in the above line at Ninth and Pine Streets on a lot 50 by 110 feet, with a large warehouse opposite, and coal yards in other parts of the city. Has been making improvements and additions each year has been in business, and expects to continue to enlarge right along. Gave out the following brief information:

(1 and 2) Receives coal, flour, and grain. (Mr. Gotto stated the amount of tonnage, but did not wish it made public: it is therefore added in under the head of "Miscellaneous items," in the summary.—C. I. C.)

(3 and 4) No shipments made; all goods are teamed out for local use.

(5) Obtains his coal from Pennsylvania and Ohio; grain from Chicago: and flour from Kansas and Minnesota.

(8 and 9) A lower freight rate, which no doubt will result, would be a great benefit to this locality.

(10) Fifteen.

Maxwell & Dunn—Coal and lumber.—Have been established some 16 years; are located at the foot of Fifth Street along the water front where have 6 acres of land. Dock is about 900 feet long, and about two-thirds of it is in usable shape. State that the lumber business has been gradually declining, and that no one does the large amount of business in that line that they formerly did. Mr. E. G. Dunn, member of firm, gave out the following:

(1 and 2) Receive about 8,000 tons of lumber and coal.

(3 and 4) Ship out only about 400 tons of lumber, the balance being teamed out for local consumption.

(5) Obtain coal from Ohio and Pennsylvania; lumber from Michigan and Wisconsin.

(9) Inadequate shipping facilities has driven all but one of the wholesale lumber dealers out of Michigan City, and we have no doubt but that the artificial waterway referred to would in a large measure rehabilitate that industry.

(10) Six.

Chicago, Lake Shore & South Bend Railway Co.—Electricity.—This is one of the two interurban electric lines which make Michigan City their northern terminus, and this company has its main power house here for generating electricity; it is that feature we have to deal with. They not only make electricity for their own use, but sell considerable quantities for both power and illumination purposes. The power house in question has been established about four years and is located on the banks of the upper inner harbor and immediately above the power house of the Northern Indiana Gas & Electric Co. They have about 2.38 acres of land, part of which (about 200 feet) fronts on the harhor, but have no dock facilities, although there is a dock a few hundred feet distant. This plant has recently been very much improved by an outlay of $100,000 and is now capable of producing over 50,000 kilowatt hours in a day of 24 hours. Have modern crane facilities for handling the large quantities of coal consumed. A half mile farther out and along their own line is where their general repair shops and office are located. The auditor of the company, Mr. F. Pantel, kindly furnished the following data:

(1 and 2) Receive 54,000 tons of coal and 500 tons of materials for car repairs.

(5) Coal from the eastern coal fields; materials mostly from Chicago, and some from Pittsburgh, Pa.

(7) Consume 54,000 tons of coal.

(10) Thirty employees. Annual pay roll amounts to $25,000.

A. C. Heitschmidt—Fuel, flour, feed, lime, etc.—Does a business similar to that conducted by O. W. Gotto, heretofore mentioned, excepting that he also handles cement and farming implements. Has been in business since 1888 and is located at Michigan and Spring Streets on a lot 100 by 150 feet. In addition has coal sheds on the Lake Erie and Michigan Central lines. Has no water frontage, but is only a block and a half distant from the water. He furnished the following very complete replies to the questions submitted:

(1 and 2) Receive about 5,800 tons of coal, lime, cement, feed, and crushed stone.

(3 and 4) Ship out about 30 tons of coal, cement, lime, and feed.

(5) Obtain materials from Pennsylvania, Ohio, Michigan, and Illinois.

(6) The destinations of goods shipped vary to points 100 miles to 300 miles distant; balance teamed out for local consumption.

(8) With the proper kind of dockage, this harbor could be made distributing point for anthracite coal, as freight by boat would be much cheaper than by rail. All docks should be made of reinforced concrete.

(9) The benefits derived would be between the high rate of freight charged by the railroad companies and the low rate by water.

(10) Ten.

Kramer & Sons—Wholesale grocers.—The only firm of this nature in Michigan City, and it is a branch of their main establishment at Laporte, Ind. Have been in business here for four years, and have recently moved to more suitable quarters at Second and Spring Streets, about one block distant from the water, where occupy a building 80 by 240 feet. Their cashier, Mr. L. N. Kramer, kindly furnished the following information and opinions:

(1 and 2) Receive about 1,500 tons of sugar, salt, and general groceries.

(3 and 4) Ship out to near-by points a few hundred tons of cereals, general groceries, and woodenware; balance teamed to local firms.

(5) Goods are obtained at Laporte, Ind., and various other points.

(8) The harbor should be kept from going to decay, especially at the south end, where piling, etc., is rotting. This harbor is of great value, and will be more valuable if the canal is built, and nothing should be done to impair its usefulness or waste what money has already been expended on it.

(9) The benefits to be derived from the canal would be cheaper freight rates on sugar and other manufactured articles from eastern points, and also a leverage on the railroad companies to insure better facilities for receiving shipments from points not on canal, which the railroads are not able to handle at present owing to inadequate terminals, etc.

(10) Twelve.

Indiana Transportation Co.—Passenger and freight line.—This very popular, convenient, and well-managed lake transportation line, which has been in operation since 1901, have their eastern terminal here, where they have a good dock, warehouse, and shed on the bank of the inner harbor. Their lot at the dock is some 250 by 371 feet in size. The two well-equipped, modern, mammoth steamers, the *Roosevelt* and the *United States*, operated by this company between Chicago and Michigan City, Ind., constitute the means for one of Chicago's most popular summer lake-outing trips, and many thousands of the heat-oppressed populace take advantage of the opportunity thus afforded to obtain relief by a day or half day's trip to Michigan City and return. According to the Government reports these two boats carry more people than are carried by any other boat line out of Chicago. A branch of the Treasury Department, which looks very carefully after such matters, has limited the *Roosevelt* to 2,800 and the *United States* to 2,200 passengers, although they both could carry several hundred more.

On the other hand, the pecuniary advantage derived by Michigan City from the constant influx of visitors is considerable and beyond correct estimation. Some very valuable additions and improvements are contemplated by this company which will greatly extend their usefulness and deserved popularity with the public. Their president, Mr. I. I. Spiro, and general manager, Mr. W. K. Greenebaum, have furnished the following estimate of their business at Michigan City, and also their views on the harbor and canal questions:

(1 and 2) Annually carry 250,000 passengers and 78 tons of groceries, furniture, lumber, hardware, and household goods to Michigan City.

(3 and 4) Take away from Michigan City the passengers above mentioned, with 985 tons of gloves, mittens, dry goods, hardware, etc., and 5,800 tons of coal. (The boats are always coaled at Michigan City, no coal being taken on at Chicago.)

(5) Chicago.

(6) Chicago, the West and the East.

(7) Five thousand eight hundred tons of coal consumed by the boats.

(8) The passenger business at Michigan City Harbor being very large, over 250,000 lives being handled here every year, for the protection of this enormous handling of human beings the very best safeguards to our harbor should be made. At present the conditions are such that a boat drawing 14 feet could not in severe weather enter safely on account of the shallowness of the water and the short turn around the West Pier. The new breakwater should be started about 1 mile west of the West Pier beginning at the shore line, thence running northerly about 1 mile; thence to the line with the present breakwater. The East Pier should be extended so as to form a 400 feet wide entrance, the East Pier from the intersection of the old east basin breakwater to the shore line should be removed. The West Pier to the shore line should be shortened.

(9) An artificial waterway to be constructed from Lake Erie to the southerly end of Lake Michigan would be one of the greatest improvements, and benefits to be derived will be of incalcuable value to shippers and to the business interests of the country. This proposed waterway should be at least 18 feet in depth so that larger steamers can safely travel. The large number of mileage cut off by this proposed improvement in itself would be a tremendous saving to the shipping interests. It will have a great tendency to lower the cost of living, as water freight rates are known to be greatly below rail rates. As to the most practicable route to be selected, Michigan City with its natural location and its present and future proposed harbor facilities should be the place for a harbor of refuge for the entrance to the proposed canal.

(10) One hundred and forty.

Tecumseh Facing Mills—Gloves and mittens.—Have a large glove and mitten factory, and have been in business since 1890; occupy a large building near the Sixth Street Bridge on a lot about 165 by 200 feet, and only 75 feet from the water. During July of the present year some valuable improvements were made to the equipment of their factory, by which they are now able to do more and better work. Their president, Mr. R. W. Street, furnished the following complete replies to list of questions submitted:

(1 and 2) Annually receive about 928 tons of coal, leather, cotton goods, and iron.

(3 and 4) Ship out in the same time about 410 tons of leather gloves, mittens, rags, and scrap leather.

(5) Obtain the raw material from all the States in the Union, but from New York, Pennsylvania, and Illinois in particular.

(6) Destinations are New York, Pennsylvania, Illinois, Wisconsin, Ohio, Maryland, and all States north of the Ohio River and west of the Mississippi River.

(7) Consume about 520 tons of coal.

(8) We need a harbor of refuge. The river also needs dredging.

(9) The above suggestion would be of tremendous advantage in the matter of shipments of raw materials from the East, and manufactured goods for the East. This would help to either hold freight rates, or cheapen them, which is impossible at present, owing to the time required for shipments around the Lakes, were such the custom.

(10) One hundred and fifty.

Capt. O. E. Parks—Master of steamer "United States."—Has been master of the steamer *United States*, of the Indiana Transportation Co., for the past two years. He has been sailing the Lakes for the past 52 years, and prior to his assuming command of the *United States* he owned and operated a large steam lumber barge, bearing his name, in and out of Michigan City, and which is still in commission, although having passed into other hands. In consequence of his long experience in Lake maritime matters, his opinions on questions Nos. 8 and 9 should receive due consideration:

(8) I am in favor of improving the outer harbor to form a harbor of refuge, and keeping in repair and dredging the inner harbor to keep it equal to its present condition, until the demands of commerce require further improvements.

(9) I consider the benefits to be derived mostly local, unless the Illinois and Michigan Canal be enlarged and navigation improved to the Mississippi River to accommodate the new sized Erie Canal boats, as only a few small steamers would use this canal, the large ones preferring to go around by Lakes, straits, and rivers.

William B. Manny—Commercial agent.—Is commercial agent of the Chicago, Indianapolis & Louisville Railway Co. ("Monon Route"), is interested to some extent in the coal trade, and has taken considerable interest in the civic affairs of Michigan City. He advances his views as to questions Nos. 8 and 9 as follows:

(8) The present harbor is behind the times to take care of large boats now used in iron and coal trade, with the result that the only tonnage we now have is salt, ties, and lumber, which can be carried in small vessels. This, with passenger traffic, is all we can handle at the present time.

A deep harbor would be of great advantage to the vicinity, as it would enable them to obtain cheaper fuel, and also allow them to enlarge their manufacturing, particularly in the iron industry.

(9) The community would be largely benefited in many ways in the way of being able to obtain iron and coal in large quantities and at lowest rates.

Capt. Donald MacLean, master of steamer "Roosevelt."—Is master of the steamer *Roosevelt*, of the Indiana Transportation Line, and has been since she was built in 1906. He has been in active service on the various lakes since 1872. Was for a long time commodore captain of the Lake Michigan & Lake Superior Line, operating boats between Chicago and Duluth. A naval officer formerly stationed at Chicago remarked that he considered Capt. MacLean the best navigator of all the various lake captains he had met. His views on the harbor and canal questions, which follow, are therefore worthy of attention:

(8) The number of lives carried in and out of Michigan City should be sufficient reason for making the best possible harbor. In its present condition it is not safe for a medium-sized boat drawing 14 feet in severe weather, on account of the short turn to be made around the West Pier and the shallowness of the water. I would suggest that a breakwater be started at the shore line 1 mile west of West Pier, run out 1 mile in a northerly direction, then on a line with the present breakwater, then the East Pier extended to form an entrance 400 feet wide, remove the East Pier from the intersection of the old east basin breakwater to the shore line, shorten the West Pier to the shore line, using those cribs to extend the present breakwater to shore if we can not have the other.

(9) A uniform system of canals could not help but be a great benefit to the country at large. Freight will always be carried cheaper by water than rail. There should be some restrictions as to the style of boats used in those canals. They should have fairly fine ends so as not to agitate the water enough to disturb the banks of the canals. The canals should be large enough to take lake-going steamers of 1,000 to 1,200 tons. As Indiana has no public harbor that can be entered in a severe storm, Michigan City is located just where there should be a grand harbor of refuge as an entrance to such a canal.

Commercial Club of Michigan City.—This club numbers among its membership many of the leading merchants, citizens, and others interested in the city's welfare and civic improvement. They indorsed the mayor's replies and suggestions (to be found on page 30 of this report) by the following remarks:

"The Commercial Club takes occasion to say that it has examined the answers * * * as submitted by the mayor of this city and desire to express its approval and entire indorsement of the things therein set forth." (Commercial Club of Michigan City, by H. L. Crumpacker, secretary.)

This club also puts itself on record in expressing its views of the proposed canal (question 9), but makes no reference to question 8, probably thinking the mayor's remarks sufficient. These views, submitted by them on their own letterhead, are next attached.

COMMERCIAL CLUB,
Michigan City, Ind., September 20, 1912.

Whereas, after a thorough investigation of the question in all its phases, we are satisfied and convinced that an artificial waterway should be constructed from Lake Erie, at or near Toledo, Ohio, to the southerly end of Lake Michigan; and

Whereas the commercial and industrial interests of northern Indiana and northern Ohio would be greatly benefited by the construction and operation of such a waterway: Therefore be it

Resolved, That the Commercial Club of Michigan City pledge its support to the furtherance of this project and all possible assistance to the construction of such a waterway along the most practicable route between the above-mentioned points; and be it further

Resolved, That this resolution be spread upon the minutes of this organization and copies thereof distributed to all those whom it may concern.

COMMERCIAL CLUB OF MICHIGAN CITY,
By H. L. CRUMPACKER, *Secretary.*

Michigan City Tanning Co.—Tannery.—Are doing a modest business of tanning horsehides. Have been in existence some two and one-half years. Are located on the river bank, right below the Henry Lumber Co.'s yard. Have plenty of dockage, but make practically no use of it, and is in bad condition. They expect to gradually improve their plant. Mr. G. U. Weiffinbach, manager and treasurer, furnished the following complete information with reference to their tonnage, etc.:

(1 and 2) Receive about 1,800 tons of coal, hides in raw state, tanning liquors and extracts.

(2 and 3) Ship out about 1,000 tons of glove leather, horsehide shell butts for razor-strop purposes, and side leather.

(5) Obtain the raw materials mostly in Europe, although we buy some rawhides in New York, Michigan, and Ohio.

(6) We ship to different points, but mostly to Adrian, Mich., Chicago, Ill., St. Louis, Mo., and to New York City.

(7) Consume about 600 tons of coal.

(8) Have not given this point sufficient consideration to make an intelligent answer. (Mr. W. is a nonresident, only visiting the place occasionally.—C. I. C.)

(9) If the construction of the waterway is undertaken, it would seem that it would be possible to secure a better freight rate via water and rail on our leather, finished,

from this point to Adrian, Mich., as we sell four-fifths of our output to the Gibford-Weiffinbach Co., of that place.

(10) Twenty.

A. R. Colburn Co.—Lumber and interior finish.—In addition to a regular lumber business on a moderate scale, they have a mill for producing interior finish work. This firm enjoys the distinction of being the pioneer firm in the lumber business in this locality, having been in business since 1868. Are located at Second and Spring Streets, some 400 feet from the water, on a lot about 150 by 650 feet. Use the adjacent Monon Railroad dock, when occasion requires, and also have a railroad spur into plant. Mr. S. W. Larsen, their treasurer, gave the following data as to tonnage, etc.:

(1 and 2) Receive in about 3,075 tons of lumber and coal.

(3 and 4) Ship out about 500 tons of interior trim, sash, doors, and lumber; balance teamed out for local use.

(5) Wisconsin, Michigan, Southern States, and Pacific coast.

(6) Finished materials are mostly shipped to the Middle Western States.

(7) Consume about 600 tons of coal.

(10) Thirty-five.

Staiger Hardware Co.—Hardware and sewer pipe.—This is the oldest and largest firm of the kind in Michigan City, having been established since 1858. The main store (of three floors and 50 by 165 feet in size) is located at 613 Franklin Street, in the retail district, while they handle their sewer pipe and other heavy commodities at a convenient railroad siding on Canal Street. One of the members of the firm, Mr. George J. Staiger, made the following brief statements:

(1 and 2) Receive about 12,500 tons of hardware and sewer pipe.

(3 and 4) Make no shipments; all teamed out for local use.

(9) Could buy more of our class of goods in Toledo, Fort Wayne, and the East that we can not now obtain without long delays on account of transferring of freight.

(10) Twenty-five.

Haskell & Barker Car Co.—Freight cars.—It is claimed that this is the most complete factory for the construction of wood and steel freight cars in the United States, and also that it employs more men than any manufacturing establishment in the county. It certainly is the largest establishment of any nature in Michigan City, their monthly pay roll amounting to more than $150,000. They do no assembling like in other plants of this kind, because everything that goes to make up a car is actually made on the place. This plant is a very old one, dating back to 1852, the year the first railroad was built through Michigan City, and was incorporated in 1871. It occupies two large plats on the west side of the city, amounting to 150 acres of land, of which 40 per cent is under cover. During the periods when wooden box cars were supreme they turned out 15,000 annually. Have just added a new steel plant and central power station, at an expenditure of one and one-half million dollars, and are now fully equipped to make both wooden and steel cars. All of their equipments are modern and up to date, and they will soon install a series of sanitary bubbling drinking fountains over the entire plant, and the water therefor will be supplied from their own artesian wells, three in number. This plant also has its own pumping station for securing water from the lake for general use. Am indebted to Mr. W. J. McBride, president, for much of the above information, and to Mr. Charles Porter, treasurer, for the following tonnage:

(1 and 2) Receive about 350,000 tons of lumber, steel, bar iron, pig iron, coal, coke, and fuel oil.

(3 and 4) Ship out about 250,000 tons of new freight cars on their own wheels.

(5) All over the United States.

(6) Delivered principally to railroad companies entering Chicago and Michigan City.

(7) Consume about 100,000 tons of coal.

(8) We indorse plans and recommendations as outlined in letter[1] of Mayor Miller, of this city

(9) To further in all ways the commercial and industrial interests of northern Indiana and Ohio.

(10) From 3,000 to 3,500.

W. L. Rawlings—Coal.—This is the oldest coal firm of the city, being in existence since 1880. Is located on the harbor banks at foot of Franklin Street, having some 200 feet frontage on the south side, and 125 feet frontage on the north side. The former dock is city property and is in very bad condition; the latter is in good condition and is used for coaling boats. As soon as the city places the south dock in good condition,

[1] For letter see p. 30.

Mr. Rawlings contemplates adding some modern quick-loading and unloading devices. He gave out the following tonnage and opinions:

(1 and 2) Receive about 5,000 tons of coal per year.

(3 and 4) The coal is nearly all teamed out for local use, some little being used for coaling boats.

(8) Would say I think we need a harbor of refuge as we are at the foot of the lake and the northwest winds create a high sea here. Boats getting into this part of the lake have no protection whatever in bad weather.

(9) The benefits derived from such a waterway are almost impossible to numerate. It surely would shorten the route from east to the west via water and thus reduce freight charges and encourage numerous industries along the route and at this point.

(10) Ten.

Consumers Cooler Co.—Water coolers.—While the company has been established since 1903, this particular factory is only 3 years old. They manufacture in large numbers the modern sanitary water coolers now in general use in most of the offices throughout the country. Also make a few soda fountains and dish washers. Are located on the eastern edge of the city where they have 4 acres of land, the main building on which is 66 by 385 feet in size. A spur from the Lake Erie & Western tracks extends into their yards. They issue a very neat and comprehensive catalogue describing their goods, etc. Mr. W. A. Bolger, the treasurer of the company promised to furnish the tonnage data, etc., but the information was not received in time for this report. (See estimated tonnage in summary.)

Michigan City Lumber & Coal Co.—Lumber and coal.—Do a general lumber and coal business, and have been operating same for 22 years. Yards are located not far from the water at Second and Washington Streets, and are about 165 by 330 feet in size; also rent a dock from the Michigan Central Railroad when they have occasion to use one for unloading schooners. Contemplate erecting new coal sheds in the near future. This firm ranks second in the lumber business of the city, and their manager, Mr. G. R. Young, expressed willingness to furnish the tonnage data requested, but desired some time in which to do so, and the information was not at hand when the report was closed, hence the figures in the summary are estimated.

Root Manufacturing Co.—Interior finish.—Manufacture all kinds of interior finish (wood) for buildings, and are located at Second and Wabash Streets, and from 500 to 600 feet distant from the harbor. Have about 2 acres of ground, of which fully one-half is under cover. The present business has been in existence for about 15 years. Prior to that time and commencing in 1881, this same firm conducted a large lumber business, handling annually about 30,000,000 feet of lumber and from 50,000,000 to 75,000,000 shingles. Refer with some pride to fact that present business has never suffered a shutdown or strike. Two railroad spurs extend into plant. They contemplate making some slight improvement to plant in near future. The president and practically the owner, Mr. H. A. Root, promised to respond to request for tonnage data, but failed to do so. The figures appearing in summary are estimated.

F. C. Miller—Mayor.—The present efficient mayor of Michigan City has faithfully served the city for six years, and is therefore enjoying his second term of office. He is also president of the Commercial Club, and hence has a double interest in the city's welfare and civic advancement. The petition presented to Congress last December requesting the further improvement of the harbor, and which resulted in the calling for a preliminary examination of said harbor by the river and harbor act approved July 25, 1912, was largely due to his efforts. He has made very full and comprehensive replies to questions 8 and 9, and accompanied them with a map illustrating the proposed improvements desired.

8. In general anything which would tend to show the advisability of further improving this harbor, the character of improvement desired, and the points where it should be improved.

Replying to interrogatory No. 8, I, the undersigned, as mayor of Michigan City, Ind., being interested in the welfare of the harbor at Michigan City, Ind., respectfully recommend that improvements of the outer harbor at this place be completed in accordance with the plans outlined on the map hereto attached, subject to such modifications as may be suggested by the engineers of the War Department, and in support of this statement I present the following reasons and facts:

(*a*) Heretofore the shipping business at this point has been accommodated at the docks along the inside harbor, but the developments of lake boats during the past 10 years has made this system impractical, on account of the size and draft of the modern lake carriers, and here, as elsewhere, it is now apparent that in order to furnish proper shelter and cargo facilities a protected outer harbor is a necessity.

(*b*) This harbor is located at the southeasterly end of Lake Michigan and is subject to the full force of the prevailing gales, and should be so constructed that boats coming to the port, either with cargo or for shelter, can safely enter during storms, and after entering be safely sheltered. The present arrangements afford no such security, and the need of some harbor of refuge in this quarter of the lake is self apparent. The plan I present will supply this need.

(*c*) There is an active movement now on foot to secure the construction of a canal from the foot of Lake Michigan to the head of Lake Erie. The report of the Government engineers on this project promises to designate Michigan City as one of the probable terminals of its western end. This work, if carried out, would greatly add to the importance of the harbor, and would require proper terminal facilities at this point.

(*d*) This district around the southern shore of Lake Michigan is rapidly becoming an important center for the manufacture of steel and steel products. For the western trade, at least, all steel supplies will be furnished by this district. It has only three protected harbors, South Chicago, Gary, and Michigan City. Of these the first two are controlled by a private corporation, and at both of them the outside slips are held for strictly private use. Michigan City, being the only open port in the district, should be brought up to modern requirements.

(*e*) The plan for the outside harbor which I submit does not contemplate the removal or abandonment of the breakwater now constructed. The design is to complete the original plan and continue the breakwater to the shore, so as to afford complete protection.

(*f*) A large part of the business at this port is now passenger traffic. During the year 1912 more than 250,000 passengers were carried in and out of the harbor. This business is rapidly increasing, and we urge these improvements, especially for the protection of these passenger boats laden with human freight.

(*g*) In support of subdivision (*b*) of this statement I offer the following statistics of wrecks, injuries, and fatalities happening hereabouts, which possibly would have been avoided had Michigan City a harbor of refuge, to wit:

The steamer *F. W. Wheeler*, loaded with a cargo of hard coal at Buffalo, N. Y., for Chicago, arrived off this port on the morning of December 7, 1893, with 2,100 tons of coal. Steamer's gross tonnage, 1,687.89; length, 265 feet 5 inches; breadth, 40 feet 5 inches; depth, 19 feet 4 inches. Value of steamer, $120,000; value of cargo, $20,000. Was rated A 1; not insured; men saved. Vessel and cargo total loss.

The schooner *Moses Gage* with a cargo of lumber for Michigan City arrived on the morning of May 19, 1894; dropped anchor back of breakwater and was driven ashore by a fierce west wind. If our proposed harbor of refuge had been completed at that time, the vessel and cargo would have been saved. Value of vessel, $15,000; value of cargo, $5,000. Vessel and cargo total loss.

Steamer *Chicora* left Milwaukee on the morning of January 21, 1895, bound for St. Joseph, Mich., with a crew and passenger list of 25 men and a cargo valued at many thousands of dollars. After the steamer had left Milwaukee several hours the wind from the west was blowing a gale. As it was impossible to get back to the west shore the boat had to continue on and attempt to weather the storm. If such a harbor as proposed at Michigan City, Ind., had been built at that time, the steamer, cargo, and 25 human lives would probably have been saved. Twenty-five lives lost and steamer and cargo total loss.

Steamer *Horace A. Tuttle*, loaded with 76,000 bushels of corn at Chicago, bound for Buffalo, N. Y., with her tow, the schooner *Aberdien*, loaded with 47,000 bushels of corn for the above-named port. The wind was blowing a terrific gale from the west, making it impossible for him to hold his tow; so he let go of the vessel and headed the steamer for Michigan City and tried to make this port, as it was the master's only hope of escaping disaster. Tonnage of vessel 1,585.79; length, 250 feet; beam, 38 feet; depth, 20 feet. Value of vessel, $72,000; value of cargo, $25,000. Vessel and cargo total loss.

9. The benefits to be derived, if any, should an artificial waterway be constructed from Lake Erie at or near Toledo, Ohio, to the southerly end of Lake Michigan by way of Maumee River and the city of Fort Wayne, Ind., or other practicable route.

The saving to this part of the country in freight on coal, steel, iron, and other necessaries of life would mean many thousands of dollars, and in my judgment the project should be immediately built by the United States Government.

All of which is respectfully submitted.

FRED C. MILLER,
Mayor of Michigan City, Ind.

SEPTEMBER 20, 1912.

[A short sketch of Michigan City, Ind., the result of the writer's personal observations, interrogations, and conversations while engaged in collecting the industrial statistics of that city.]

Michigan City is situated on the shore of Lake Michigan at the mouth of Trail Creek, in La Porte County, in the northwestern corner of the State of Indiana, 38 miles ESE. of Chicago in an air line across the lake, and from 52 to 55 miles by rail from said city, according to the route taken.

It is not the county seat, but is the largest town in the county, having at present a little over 22,000 population. The 1910 census enumerators gave the city 19,027. It is the center of a rapidly developing manufacturing zone adjacent to Chicago.

There are from 35 to 40 miles of well-paved and curbed streets. The public buildings, such as churches, schools, city hall, post office, library, Y. M. C. A., hospital, etc., are unusually fine and commodious structures of their kind, and a credit to the place. For recreations and outings there is a small but well-arranged public park, country club, golf links, canoe club, sailing and motor boating, two base-ball grounds, and lake excursions on the large steamers hereinbefore mentioned, etc. The residential streets are nicely parked with lawns and well shaded with thrifty shade trees, and rentals were found to be very moderate. The deposits in the four local banks amount to over $3,000,000, the actual figures for the year ending July 31, 1911, being $2,902,000. The postal receipts at the local post office for the last fiscal year amounted to $35,679.85 for the sale of stamps alone.

Besides the present harbor facilities, under governmental control and maintenance, United States life-saving and lighthouse stations, and unexcelled steamboat service, the city is served by four prominent trunk lines of railroads and two good wide-reaching interurban electric lines. In fact, Michigan City is the northern terminus of a network of electric lines radiating all over the State of Indiana. In addition to all these, the city has its own local street car line.

Strictly speaking, there are only about one dozen manufacturing plants to be found within its borders, while there should be by rights many more. Unhappily, for many years there was a certain strong influential power which dominated all affairs in a selfish manner, which was to prevent other manufacturing plants of any importance from gaining a foothold in Michigan City. Happily, in the natural course of events, that influence is now removed, and the further development and improvement along all lines is only a matter of time and details.

There is a large tract of vacant land containing upward of 2,800 acres lying just west of the city limits and bordering on the lake front, which its owners are holding for sale to such plants like the Baldwin Locomotive Works, who recently acquired a 370-acre tract between East Chicago and Gary, and who had this Michigan City plat under consideration. It is nevertheless true, however, that should any more large eastern steel plants, or others in the Baldwin class, seek sites in the new steel industrial region, this is the only available territory left where they could obtain large enough acreage for their needs. The present owners declare they will negotiate only with such large interests for sale of said land.

A car ferry from Michigan City to Chicago (similar to the one in operation between Milwaukee, Wis., and Ludington, Mich.) by the combined railroad interests has been contemplated and is one of the not far-distant possibilities, as well as an extension of the Indiana Harbor Belt Railroad Co.'s line to include Michigan City. A brass and foundry company from Warsaw, Ind., have been negotiating for a suitable site for a plant which would employ 50 men. A rolling mill to replace the well-known landmark called "Hoosier Slide" is also a rumored possibility. While Michigan City will probably never again regain the prestige she once enjoyed in the lumber business, there are those who have strong hopes for a revival of the cedar post and salt industry—all water commerce.

The citizens are very much in favor of the canal proposition and further improvement of their harbor, claiming it to be the only open port in the district. They also call attention to the fact that within a radius of 35 miles of Michigan City there is a large number of manufacturing plants of considerable magnitude, all of which would participate in the benefits of the water differentials incident to harbor expansion; and that although Michigan City has a lower freight rate from eastern points than Chicago the proposed combination of electric and water lines will result in lower rates than now prevail.

Summary of statistics of industrial plants, etc., at Michigan City, Ind.

[Chicago, Ill., Oct. 14, 1912.]

Name and nature of industry.	Page in report.	Number of men employed.	Tonnage received.	Tonnage shipped.	Tonnage of coal consumed.	Remarks.
Chicago, Lake Shore & South Bend Railway Co.: Electricity.	25	30	54,500	.....	54,000	
Colborn Co., A. R.: Lumber and interior finish.	29	35	3,075	500	600	1,000 tons of this by water.
Consumers Cooler Co.: Water coolers...	30	25	1,000	500	200	Commerce estimated.
Ford & Johnson Co.: Chairs and settees.	22	700	17,000	10,500	3,000	
Gotto,[1] O. W.: Fuel, flour, and feed...	25	15	.....	.....	.....	
Haskell & Barker Car Co.: Freight cars.	29	3,300	350,000	250,000	100,000	
Haviland Bros.: Coal, feed, and storage.	23	12	3,800	100	.....	
Heitschmidt, A. C.: Fuel, flour, feed, lime, etc.	25	10	5,800	30	.....	
Henry Lumber Co.: Lumber.....	24	35	20,000	.....	.....	19,875 tons of this by water.
Indiana State Prison: Twine, monuments, etc.	24	75	20,000	5,000	12,000	
Indiana Transportation Co.: Passenger and freight line.	26	140	985	78	.....	1,063 tons of this by water, to which must be added 250,000 passengers carried.
Kramer & Sons: Wholesale grocers....	26	12	1,500	500	.....	
Kronthal & Co., B.: Shirts and dresses.	23	200	1,000	850	150	
Maxwell & Dunn: Coal and lumber....	25	6	8,000	400	.....	3,000 tons of this by water.
Michigan City Lumber & Coal Co.: Lumber and coal.	30	10	6,000	100	.....	1,000 tons by water (estimated).
Michigan City Tanning Co.: Tannery..	28	20	1,800	1,000	600	
Northern Indiana Gas & Electric Co.: Light and power.	24	100	22,500	1,000	20,000	
Rawlins, W. L.: Coal.....	29	10	5,000	1,000	.....	
Reliance Manufacturing Co.: Shirts....	22	500	2,000	1,000	1,000	
Root Manufacturing Co.: Interior finish.	30	40	2,000	800	500	Commerce estimated.
Staiger Hardware Co.: Hardware and sewer pipe.	29	25	12,500	.....	.....	
Tecumseh Facing Mills Co.: Gloves and mittens.	27	150	928	410	520	
Zorn Brewing Co., Ph.: Beer.....	23	15	1,850	.....	1,200	
Miscellaneous items, such as railroad ties, wood plup, sand, fish, cement, bricks, oils, three other coal firms, three other hardware firms, and other minor business.	.....	75	34,900	20,150	.....	2,950 tons of this by water.
Total.....	.....	5,540	576,138	293,918	193,770	28,888 tons by water.

[1] Tonnage included in miscellaneous items by request.

NOTE.—The total of columns 4 and 5, or 870,056 tons, represent the annual commerce by rail and water, of which 28,888 tons (column 7) were transported by water. The items in column 6 are also included in column 4.

ENGINEER OFFICE, UNITED STATES ARMY,
Chicago, Ill., December 26, 1912.

From: C. I. Comfort, clerk.
To: Lieut. Col. George A. Zinn, U. S. A.
Subject: Additional and supplemental information concerning Michigan City, Ind.

(1) Who owns the two boats operated between Chicago and Michigan City by the Indiana Transportation Co.? Who are the stockholders?

These boats are owned by 80 stockholders, practically all of whom are Michigan City residents. The ones who have the most money invested are as follows, in the order named:

John G. Mott, Highland Park, Ill. (former resident of Michigan City); I. I. Spiro; Robert P. Zorn, Charles Zorn, Mrs. Ernestine Schaeuffele, August Kroll, Tillotson & Blinks (physicians), S. W. Larsen, Colborn & Co., Oscar Romel (now of Chicago, formerly of Michigan City), W. K. Greenebaum (Chicago), and 68 other merchants and citizens of Michigan City, many of whose names the writer so recognized.

(2) Are the owners or stockholders or officers of that company officers or employees of any railroad company, or vice versa?

No.

(3) Has the Indiana Transportation Co. any agreement with any railroad or express company as to its rates for freight and passenger traffic?

None, whatever.

(4) Are tickets to Michigan City good on either boat or trains?

No.

(5) Does the Indiana Transportation Co. handle the freight carried on its boats or is it handled by an express company as on railroads?

The company handles its own freight entirely.

(6) Tariff schedules of all classes of freight between Chicago and Michigan City via Indiana Transportation Co.'s boats, also via all railroad and express lines—also passenger tariffs.

Via Indiana Transportation Co.'s boats (all per 100 pounds)—first class, 12½ cents; third class, 8 cents (average).

Via the railroads: As the official classification No. 38, now in force, which is: First class, 14½ cents; second class, 13 cents; third class, 12 cents; fourth class, 10 cents; fifth class, 7½ cents; sixth class, 6½ cents. Minimum charge, 25 cents.

NOTE.—As this classification No. 38 covers everything that can be shipped and is not very well understood by those not in the railroad or steamship service, there are given here as a matter of comparison a few items under the first and third classes of freight, which are the classes handled by the Indiana Transportation Co.

First class: Dry goods, groceries, meats, household goods, fresh vegetables, hosiery.

Third class: Hardware, canned goods, lumber, hides, iron and steel, grease.

Via the express companies: 1 to 5 pounds, 25 cents; 5 to 20 pounds, 30 cents; 20 to 25 pounds, 35 cents; 25 to 45 pounds, 40 cents; 45 to 50 pounds, 45 cents; 50 to 100 pounds, 50 cents; over 100 pounds, one-half cent per pound.

Passenger tariffs by all routes: Via boat line, 50 cents (or 75 cents round trip); via interurban line, 85 cents; via railroad lines, $1.05.

There are only three express companies doing business at Michigan City, and their names and the lines on which they operate are as follows:

American Express Co.: Operates on the Michigan Central, Lake Erie & Western, and Monon roads between Michigan City and Chicago.

United States Express Co.: Operates on the Pere Marquette Railroad.

Wells-Fargo Express Co.: Operates only on the interurban line (Chicago, Lake Shore & South Bend Railway), and do not operate on any of the steam lines between Michigan City and Chicago.

(7) Is there any prorating or single bill of lading agreement between the Indiana Transportation Co. and any express or railroad company? If so, what company?

No; none whatever.

(8) Names of owners of all water-front property at Michigan City on the lake front from a point three-fourths of a mile west of the harbor entrance to a point one-half mile east of the entrance and on the "inner harbor" from the entrance to and including the upper turning basin.

(The mayor's remarks follow as to question 8:)

The names of owners of all water-front property from a point three-fourths of a mile west of the harbor entrance to a point one-half of a mile east of harbor entrance are as follows:

West of harbor entrance: City of Michigan City; Daniel Mole; W. B. Manny and J. C. Vanatta and H. F. Benham Estate; J. H. Orr and H. A. Schwager; Ph. Zorn Estate.

East of harbor entrance: United States Government life-saving station, Michigan City Ice & Cold Storage Co., United States Government lighthouse strip, city of Michigan City park.

(9) Use made of this water-front property.

(Mayor's reply follows:)

That portion of the above-describerd water-front property lying east of harbor entrance is used for the following purposes: United States Government life-saving station, United States Government lighthouse site, city of Michigan City park purposes.

That portion of the above described water front lying west of harbor entrance is used as follows: That portion immediately west of entrance and abutting upon harbor is provided with railroad sidetracks facilities for transferring from boat to railroad, or vice versa, and has been used for handling lumber, pig iron, salt, ties, anthracite coal, pulp wood, sand, and package freight.

West of that portion abutting along harbor as above described the land is provided with railroad sidetracks, which extend westerly parallel with the shore line for a distance of about three-fourths of a mile. These tracks are now being used for loading sand onto cars by means of steam shovels and by hand barrows to the extent of a trainload each day.

(10) Appliances or apparatus (description of) used on the water-front property for handling bulk and package freight from boat to shore, and vice versa.

(Mayor's reply follows:)

No mechanical appliances for loading or unloading along the water front is provided for, all such work having been performed by hand.

(11) Names of commodities so handled—their origin and destination.

(Mayor's reply follows:)

Name of commodity.	Origin.	Destination.
Lumber	Shore line of Lakes Michigan and Superior.	Illinois and Indiana cities.
Coal	Oswego and Buffalo	Home consumption.
Pig iron	Northern lake ports	Used in local factory and shipped to Indiana and Illinois cities.
Ties	Cedar River and other ports	Street and steam railways in Indiana and Illinois.
Salt	Bay City, Manistee, and Ludington	Indiana and Illinois cities.
Pulp wood	Northern Michigan ports and rivers	Paper mills in inland cities.
Package	Chicago	Chicago.
Sand	Michigan City	Do.

(12) Tonnage of anthracite coal received at Michigan City by all ways of transportation—its origin and destination.

It was ascertained that there are only about 30,000 tons of anthracite coal received at Michigan City yearly, and it all comes by rail from Pennsylvania, the Scranton grades predominating. This coal is practically all used for heating private houses. There is no record kept at Michigan City of the anthracite coal that passes through there bound westward.

(13) Tonnage of bituminous coal received at Michigan City by all ways of transportation—its origin and destination.

There are upward of 325,000 tons of bituminous coal annually received at Michigan City, and it is now all brought in by rail; none by water, on account of inadequate depth of water in harbor, and also on account of poor facilities for unloading.

Two hundred and fifteen thousand tons of the above comes from the Indiana (90 per cent) and Illinois (10 per cent) coal fields; the remaining 110,000 tons comes from the Ohio (75 per cent) and West Virginia (25 per cent) coal regions. The Monon road transports the most of this coal. Owing to the short haul to Toledo or Cleveland for the Ohio and West Virginia coal, it is thought that a good canal would displace most of or all of the above-mentioned 110,000 tons and some of the 215,000 tons.

As in the case of the anthracite coal, no record is kept at Michigan City of the bituminous coal that passes through there bound westward. However, it was ascertained that in addition to the 325,000 tons just referred to, the Michigan Central road brings in for its own use and for use of the Lake Erie & Western road about 350 tons daily of bituminous coal from the Illinois and Indiana coal fields. The Monon road brings in and uses about 20,000 tons a year, and this is all from the Indiana coal fields. The Pere Marquette do all their coaling at Benton Harbor, and do not bring any to Michigan City for their own use in locomotives.

(14) Do any of the railroads transfer bulk or package freight from or to boats on the water-front property? If so, kind of commodity, prorating arrangements, etc.

No transfer of bulk or package freight is made by rail to boats, but some cedar railroad ties and pulp wood have been transferred from boats to rail on the water property. (See "Vessels entered" on Exhibit C, forming answer to question 18. No prorating arrangements are entered into for these transfers. See also mayor's reply to question No. 11.)

(15) Will the city of Michigan City provide or equip a dock where vessels may land to receive and discharge cargo if the United States provides a 21-foot channel? Where would they wish to locate this dock?

(Mayor's brief reply follows:)

Yes.

NOTE.—The mayor explained to me in person, pointing to location on the print he furnished where the city owns one site and may condemn another if necessary.

(16) If the exterior breakwater were connected with the shore in accordance with the mayor's plan, would the city secure any portion of the lake front thus inclosed for a public dock?

(The mayor's reply follows:)

The city now has control of approximately 700 feet of the lake front abutting upon the line of the proposed outer harbor improvement and is willing to obtain control of as much more of the same as the Government officials might in their judgment deem necessary for providing a public landing.

(17) The terminal information above asked for should be marked on a blue print which should indicate: Names of owners, names of occupants, purpose for which

used, docked or undocked, shipping facilities (machinery, etc., for handling merchandise), whether railroad docks are used for transfer of freight between water and rail, property lines, etc.

(See Exhibits A[1] and B[1].)

(18) Names and description (steam or sail, length, beam, draft, etc.) of all vessels that have entered or cleared from Michigan City during the last 12 months; their cargoes, origin and destination of cargoes, etc.

(See full reply to this question at Exhibit C 1.)

(19) Rail rates on anthracite coal from the mines to Michigan City and Chicago.

The rate on anthracite coal from mines in Pennsylvania to Michigan City is $3.75 per ton ($2, mines to Buffalo; $1.75, Buffalo to Michigan City). Was informed that it is the same rate to Chicago, on account of coming via Buffalo. Was also informed, however, that when coal comes by rail to Chicago via Pittsburgh the rate was $3.50.

The rates on bituminous coal to Michigan City are given here also, although this new set of questions did not call for it:

From Ohio points, $1.65 per ton.

From West Virginia, $1.90 per ton.

From Illinois points, $1.12 per ton.

From Indiana points, 87 and 77 cents per ton.

(20) Water and rail rates on lumber from points in [wherever lumber comes from] to Michigan City.

Water rates on lumber from Manistee, Menominee, Rapid River, and Empire, Mich., to Michigan City, averages $1.75 per 1,000 feet b. m. this season; last season it was a little less. Shortage of boats this season cause of increase in rate.

NOTE.—This is equal to 4.4 cents per 100 pounds.

Rail rates on lumber from points in Mississippi, Louisiana, Texas, and Arkansas range from 24 to 26 cents per 100 pounds.

(21) If Michigan City had a 21-foot channel, about how much anthracite coal would reach there by water from the east?

(The mayor's reply follows:)

During the years from 1893 to 1897, inclusive, Michigan City had a large coal dealer who received all anthracite coal used in this city by boat, which at that time averaged about 10,000 to 15,000 tons per year. It is safe to say that if the Michigan City Harbor had a depth of 21 feet, which would permit the larger size of coal and grain carrying boats to enter, all of the anthracite coal now used in the city and a great portion used throughout the States of Indiana and Illinois, with which we have excellent railroad connections, would be received by boat from the east, the amount of which used in the city of Michigan City alone would be approximately 30,000 tons per year.

NOTE.—In addition to the above, I have to state that Mr. Manny, freight solicitor of the Monon road, is of the opinion that if a 21-foot channel is obtained some of the railroads would cooperate and handle from 50,000 to 75,000 tons of anthracite coal brought to this place by boat, thence by rail to southern points. He figures a saving of $1 per ton.

(22) Ask the mayor if the refusal of certain lumber companies to furnish information indicates that the lumber trade takes no interest in the harbor and would not be benefited by its improvement.

(Mayor's reply follows:)

All of the lumber dealers in this city signed the petition asking for this proposed improvement and assured me they would cooperate in every way to further the improvement, and would be greatly benefited thereby if it was carried out to completion.

(23) Ask the mayor to furnish definite figures to show in what way and how much the city would be benefited if Michigan City Harbor had a 21-foot channel.

(Mayor's reply follows:)

The State of Indiana is a large grain-producing State, and is traversed its entire length north and south by two steam railroads, the northern terminals of each of which are located in this city. In former years grain was shipped to eastern ports by vessels from this city, but of late years the great increase in size of the grain-carrying boats made it prohibitive from entering our harbor for lack of depth and necessitating the shipping of grain by railroad, thus greatly handicapping Michigan City. If the Michigan City Harbor had a channel of 21 feet in depth, elevators would in all probability be constructed here and grain carried to the eastern ports, and boats be reloaded at the eastern ports with anthracite coal for Michigan City and distributed throughout the State of Indiana, thereby largely reducing the high rates charged by the steam railroads.

(24) What extent of territory may be considered as Michigan City's selling market; i. e., how far west, east, and south does she sell goods in general? (Of course, certain special manufactures may be sold all over the United States.)

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[1] Not printed.

Outside of special manufactured articles, lumber is shipped to various points up to 200 miles distant; the territory for local market, however, is not much over 7 or 8 miles east, south, and west.

(25) Why are not many of Michigan City's manufactured products shipped to Chicago by water?

(The mayor was asked to reply to this question and his answer follows:)

In my opinion the reduced rate charged by steamboats would warrant me in saying that all the merchandise handled by the Michigan City merchants would be carried by boat from Chicago to this city if the boat lines would make their season longer, as the mershants are handicapped by changing from boat to railroad. The shortness of the time that the boat company carries their merchandise does not warrant the change and it is therfore objectionable.

In further reply to question No. 25, I was informed that it is because of the railroads being in opposition to the boats. The railroads make their rates so close to the water rate to Chicago that it does not pay the shipper to make the change. Rail rates amount to about 5 cents per 100 pounds carload lots and 8 cents per 100 pounds local.

(26) Would the docks along Trail Creek have to be rebuilt if the channel is excavated to 21 feet?

Yes. That is the reply from everyone to whom it was mentioned, but the mayor, however, is not agitating or very anxious to have a 21-foot channel beyond the Franklin Street Bridge.

[Concluding memoranda, which includes the names of all railroads (steam or electric) doing business at Michigan City.]

A new interurban line to skirt the eastern shore of Lake Michigan from Manistee to Michigan City is now considered an assured fact within a year. Surveyors were on the ground last week working on a preliminary line for route. This new line will tap the fertile fruit territory, and shipments to Chicago by boat are anticipated.

In January a strong effort will be made by a few enterprising men to erect a dock with modern facilities to handle Indiana coal for northern lake ports. This coal is to be a return cargo for the steamers that now bring in railroad ties, lumber, and wood pulp, and which have been forced to return "light."

The railroads transport 12,000 carloads of sand annually from Hoosier Slide. This is a peculiarly fine grade of sand and is largely used for grinding plate glass, for manufacturing fruit jars and bottles; also making of cores in foundries, and for filling and building purposes. It is estimated that 50 per cent of the sand shipped goes to Chicago, and the rest to Indiana, Illinois, Ohio, and occasionally a few cars are shipped as far away as Buffalo and Baltimore. By reference to Exhibit C1 it will be noticed that one steamer was engaged all season carrying this sand to Milwaukee.

Four railroad lines serve Michigan City, to wit: (1) The Michigan Central, (2) Pere Marquette, (3) Lake Erie & Western, and (4) Chicago, Indianapolis & Louisville (Monon route).

Two of these (1 and 2) are east and west trunk lines and connect Michigan City with Chicago direct, the Michigan Central doing the bulk of the business between the two places owing to its depot and its tracks being more conveniently located. This road has 12 passenger trains to and from Chicago daily, and the Pere Marquette has 4 trains each way daily. The Pere Marquette also has two daily and from 15 to 20 through freight trains to Chicago. None of the Michigan Central Railroad men that I came into contact with seemed to know exactly how many freight trains they had, and the best they could say on the subject was that they had four or five times as many trains as the Pere Marquette people had.

The other two roads (3 and 4) are north and south lines, reaching Chicago indirectly, and have scarcely any of the business between the two places; at least there is no passenger business.

There are two interurban electric lines at Michigan City, known as Chicago, Lake Shore & South Bend Railway, and the Chicago, South Bend & Northern Indiana Railway.

The former extends from the Randolph Street Station of the Illinois Central Railroad at Chicago to South Bend, Ind., a distance of 90 miles, passing through Pullman, Hammond, East Chicago, Gary, and Michigan City, the latter point being 56 miles from Chicago, and giving about 12 trips each way daily.

The other line, although having the word "Chicago," is not connected with that city, but extends from Michigan City to South Bend via Laporte, and giving 10 trips each way daily. There is no connection between the two lines. This latter line has two short branch lines at South Bend, one extending to St. Joseph, Mich., on the north, and the other to Goshen, Ind., on the southeast.

Respectfully submitted.

C. I. Comfort.

Exhibit C 1.

VESSELS ENTERED, 1912.

Name.	Kind.	Where from—	Length.	Beam.	Loaded draft.	Cargo.	Destination other than Michigan City.
			Feet.	*Feet.*	*Feet.*		
April:							
Desmond	Steam	Milwaukee	149	30.5	.....	Light	
F. W. Fletcher	do	Manistee	161	32	14	525,000 feet lumber	
Chas. W. Anger	do	Sheboygan	58	13.4	9	Fishing outfit	
Langlois	do	Racine	52	13	.....	Light	
Carrie Mather	House boat.	do	(?)	(?)	.....	Fishing outfit	
Maggie Marshall	Steam	Manistee	150	30	13.8	400,000 feet lumber	
Desmond	do	Milwaukee	149	30.5	.....	Light	
Susie Chipman	do	Menominee	122	26	13	250,000 feet lumber	
May:							
Desmond (8 trips)	do	Milwaukee	149	30.5	.....	Light	
J. S. Crouse	do	Waukegan	89.7	16.8	.....	do	
S. J. Nessen	do	Manistee	149	37	13.8	300,000 feet lumber	
Geo. C. Markham	do	Muskegan	141.4	28.2	13.6	383,000 feet lumber	
Maggie Marshall	do	Manistee	150	30	13.8	400,000 feet lumber	
O. E. Parks	do	Richards landing	134.4	27.7	13.6	240 cords pulp wood	Niles, Mich.
June:							
O. E. Parks	do	do	134.4	27.7	13.6	235 cords pulp wood	Do.
Do	do	do	134.4	27.7	13.6	230 cords pulp wood	Do.
Maggie Marshall	do	Manistee	150	30	13.8	400,000 feet lumber	
Theodore Roosevelt	do	Duluth	275	40	.....	Light	
O. E. Parks	do	Richards landing	134.4	27.7	13.6	230 cords pulp wood	Do.
Desmond	do	Milwaukee	149	30.5	.....	Light	
O. E. Parks	do	Richards landing	134.4	27.7	13.6	240 cords pulp wood	Do.
Geo. A. Marsh	Sail	Chicago	135	26	14	310,000 feet lumber	
Do	do	Michigan City	135	26	13.8	300,000 feet lumber	
July:							
Maggie Marshall	Steam	Manistee	150	30	13.8	400,000 feet lumber	
J. H. Shrigley	do	Alpena	171	31	14	16,000 cedar ties	Interior Indiana towns.
O. E. Parks	do	Richards landing	134.4	27.7	13.6	240 cords pulp wood	Niles, Mich.
Desmond	do	Milwaukee	149	30.5	.....	Light	
Sidney O. Neff	do	Chicago via Empire	140.6	30.2	14	426,000 feet lumber	
O. E. Parks	do	Richards landing	134.4	27.7	13.6	235 cords pulp wood	Do.
Do	do	do	134.4	27.7	13.8	240 cords pulp wood	Do.
August:							
United States	do	Milwaukee	193	41	.....	Light	
Maggie Marshall	do	Manistee	150	30	13.8	400,000 feet lumber	
O. E. Parks	do	Richards landing	134.4	27.7	13.6	235 cords pulp wood	Do.
H. J. Kendall	do	Alpena	142	31	14	10,707 cedar ties	Interior Indiana towns.
O. E. Parks	do	Richards landing	134.4	27.7	13.6	235 cords pulp wood	Niles, Mich.
Annie Lockhart	do	Detroit	(?)	(?)	13	9,700 cedar ties	Interior Indiana towns.

Desmond (3 trips)	do	Milwaukee	149	30.5		Light	
Maggie Marshall	do	Manistee	150	30	13.8	400,000 feet lumber	
O. E. Parks	do	Richards landing	134.4	27.7	13.6	235 cords pulp wood	Niles, Mich.
September:							
Maggie Marshall	do	Manistee	150	30	13.8	400,000 feet lumber	
S. O. Dixon	do	Racine	52.7	15.4		Light	
Desmond (4 trips)	do	Milwaukee	149	30.5		do	
Maggie Marshall	do	Manistee	150	30	13.8	400,000 feet lumber	
Do	do	do	150	30	13.8	do	
A. W. Lucky	Sail	Masonville	147.8	26.2	13.6	do	
Do	do	do	147.8	26.2	13.4	380,000 feet lumber	
October:							
Desmond (4 trips)	Steam	Milwaukee	149	30.5		Light	
O. E. Parks	do	Richards landing	134.4	27.7	13.8	240 cords pulp wood	Do.
Maggie Marshall	do	Manistee	150	30	13.8	400,000 feet lumber	
F. W. Fletcher	do	Cleared via Empire	161	32	14	510,000 feet lumber	
November:							
Desmond	do	Milwaukee	149	30.5		Light	
Eagle	do	do	50	10	9	Fishing outfit	
Maggie Marshall	do	Manistee	150	30	13.8	400,000 feet lumber	
Eagle	do	Milwaukee	50	10	9	Fishing outfit	

VESSELS CLEARED, 1912.

April:							
Desmond	Steam	Milwaukee	149	30.5	16	500 tons sand	
F. W. Fletcher	do	Manistee	161	32		Light	
Maggie Marshall	do	do	150	30		do	
O. E. Parks	do	Naubinway	134.4	27.7		do	
Desmond	do	Milwaukee	149	30.5	16	500 tons sand	
Susie Chipman	do	Manistee	122	26		Light	
May:							
Desmond (7 trips)	do	Milwaukee	149	30.5	16	3,500 tons sand	
J. S. Crouse	do	Port Washington	89.7	16.8	8	Fishing outfit	
S. J. Nessen	do	Pine Lake	149	37		Light	
Langlois	do	Racine	52	13	(?)	Towing houseboat Carrie Mather	
Geo. C. Markham	do	Cedar River	141.4	28.2		Light	
Maggie Marshall	do	Manistee	150	30		do	
June:							
O. E. Parks (3 trips)	do	Richards Landing	134.4	27.7		do	
Theodore Roosevelt	do	Milwaukee	275	40		do	
Maggie Marshall	do	Harbor Springs	150	30		do	
Desmond	do	Milwaukee	149	30.5	16	500 tons sand	
Geo. A. Marsh	Sail	Masonville	135	26		Light	
Do	do	Wells	135	26		do	

EXHIBIT C 1—Continued.

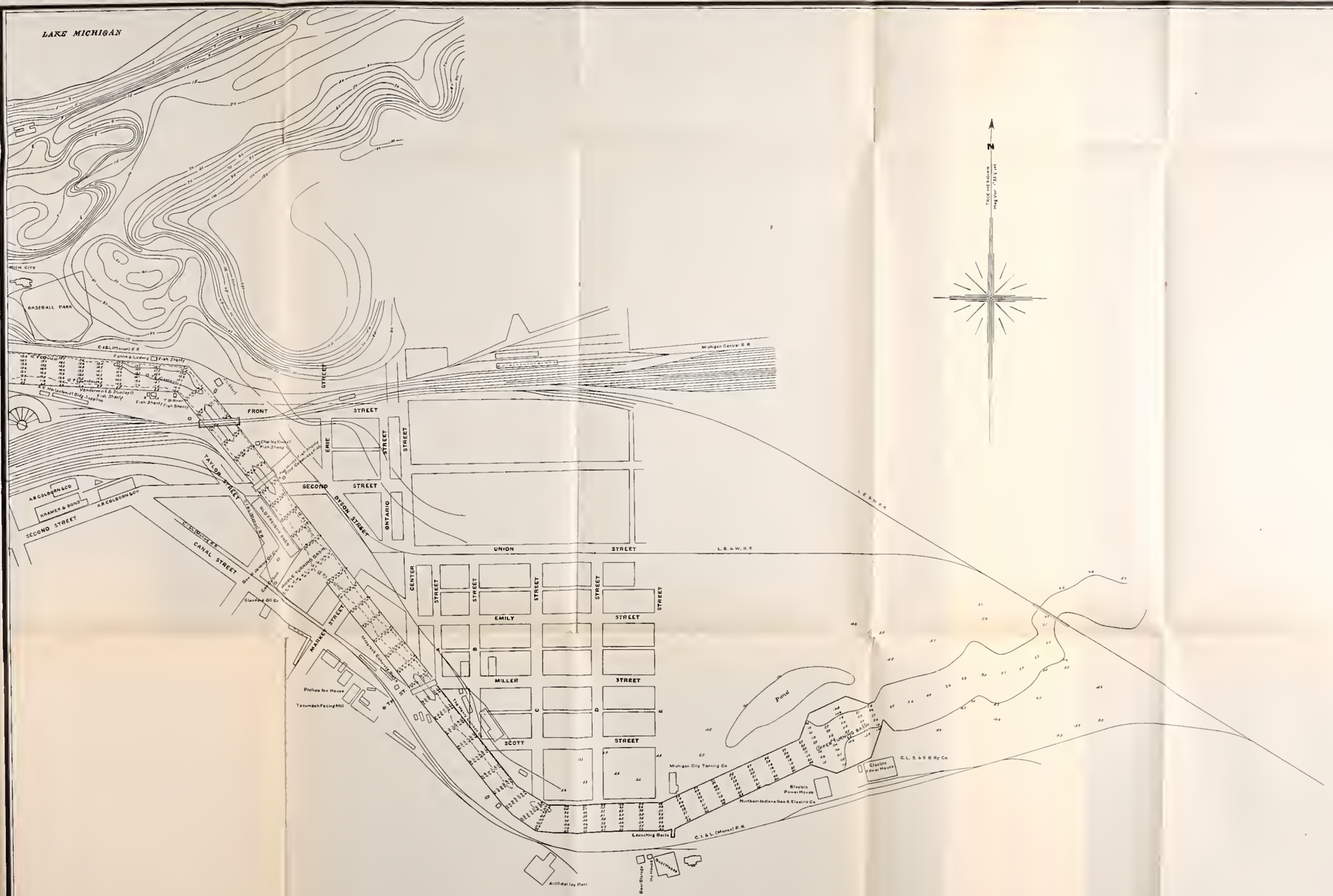
VESSELS CLEARED, 1912—Continued.

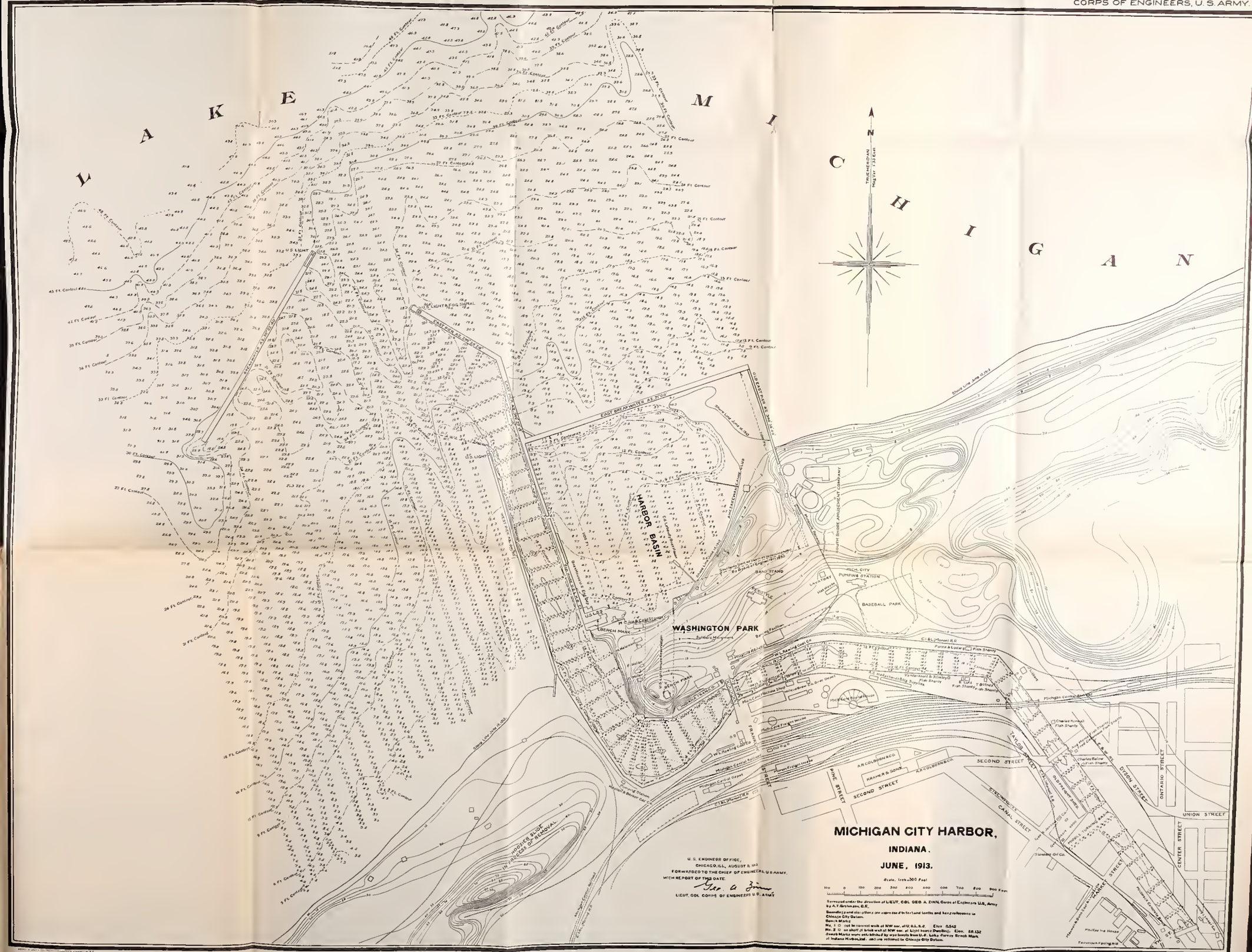
Name.	Kind.	Where from—	Length.	Beam.	Loaded draft.	Cargo.	Destination other than Michigan City.
			Feet.	*Feet.*	*Feet.*		
July:							
Maggie Marshall	Steam	Harbor Springs	150	30		Light	
J. H. Shrigley	do	Charlotte, N. Y	171	31		do	
O. E. Parks (3 trips)	do	Richards Landing	134.4	27.7		do	
Desmond	do	Milwaukee	149	30.5	16	500 tons sand	
Sidney O. Neff	do	North Unity	140.6	30.2		Light	
August:							
United States	do	Milwaukee	193	41		do	
Maggie Marshall	do	Manistee	150	30		do	
O. E. Parks (3 trips)	do	Richards Landing	134.4	27.7		do	
H. J. Kendall	do	Buffalo	142	31		do	
Annie Lockhart	do	Detroit	(?)	(?)		do	
Desmond	do	Milwaukee	149	30.5	16	500 tons gravel and sand	
September:							
Maggie Marshall (3 trips)	do	Manistee	150	30		Light	
S. O. Dixon	do	Saginaw	52.7	15.4		Towing scow	
Desmond (4 trips)	do	Milwaukee	149	30.5	16	2,000 tons sand	
A. W. Lucky	Sail	Masonville	147.8	26.2		Light	
Do	do	Wells	147.8	26.2		do	
October:							
Desmond (4 trips)	Steam	Milwaukee	149	30.8	16	2,000 tons sand	
O. E. Parks	do	Naubinway	139.4	27.7		Light	
Maggie Marshall	do	Manistee	150	30		do	
F. W. Fletcher	do	Erie	161	32		do	
November:							
Desmond	do	Milwaukee	149	30.2	16	500 tons sand	
Eagle	do	do	50	10		Light	
Maggie Marshall	do	Manistee	150	30		do	
Chas. W. Auger	do	Sheboygan	58	13.4	9	Fishing outfit	
Eagle	do	Milwaukee	50	10	9	do	

All the above is from Apr. 10 to Nov. 27, 1912.

NOTE.—Michigan City, Ind., being in the Chicago collector's district, no record is kept at Michigan City of the commerce between the two places. This information is reported by the vessels leaving Chicago to the Chicago barge office, and by the latter to the collector.

Hence to the above entrances and clearances must be added about 175 round trips by the steamer Roosevelt and about 225 round trips by the steamer United States. The two boats carried upward of 250,000 passengers and about 100 tons of merchandise into Michigan City, and brought away the passengers and about 800 tons of merchandise during the past season of 1912.


LAKE MICHIGAN
MICH CITY
BASEBALL PARK
C.S.&L.(Monon) R.R.
Michigan Central R.R.
FRONT STREET
ERIE STREET
STREET
STREET
SECOND STREET
DIXON STREET
ONTARIO STREET
UNION STREET
L.S.&M.S.R.R.
TAYLOR STREET
SECOND STREET
CANAL STREET
CENTER STREET
STREET
STREET
STREET
STREET
STREET
EMILY STREET
MILLER STREET
SCOTT STREET
MARKET STREET
A.B. COLBORN & CO.
KRAMER & BOND
A.B. COLBORN & SON
Chas. Ivy Elevator
Fish Shanty
Vandervoort & Stanley Co.
Fish Shanty
Fish Shanty
Fish Shanty


LAKE MICHIGAN
TRUE MERIDIAN
Mag Var 1°30 East
HARBOR BASIN
WASHINGTON PARK
BASEBALL PARK
BAND STAND
LAVATORY
BENCH MARK
U.S. LIGHT
EAST BREAKWATER AS BUILT
OLD EAST PIER AS BUILT
SOUTH SHORE AMUSEMENT COMPANY
MICHIGAN CITY PUMPING STATION
MICHIGAN CITY YACHT CLUB
ANGLE FENDER
PIER
PIER HEAD
PIER HEAD LIGHT
MICHIGAN CENTRAL R.R.
C.I.&L.(Monon) R.R.
MICHIGAN CANAL BASIN
MICHIGAN CANAL ENTRANCE
MICHIGAN CANAL
MICHIGAN CANAL OUTLET
MICHIGAN CANAL BRIDGE
MICHIGAN CANAL DEPOT
MICHIGAN CANAL SLIP
MICHIGAN CANAL TURNING BASIN
MICHIGAN CANAL TURNING BASIN No. 2
MICHIGAN CANAL TURNING BASIN No. 3
MICHIGAN CANAL TURNING BASIN No. 4
MICHIGAN CANAL TURNING BASIN No. 5
MICHIGAN CANAL TURNING BASIN No. 6
MICHIGAN CANAL TURNING BASIN No. 7
MICHIGAN CANAL TURNING BASIN No.